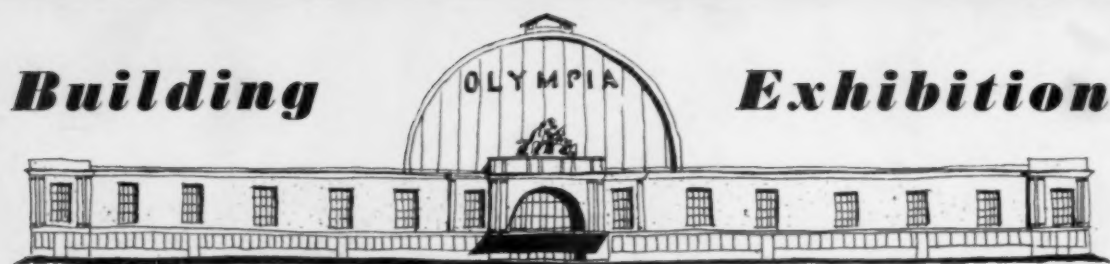


THE  
ARCHITECT  
& BUILDING NEWS



*Guide*

10 NOVEMBER 1955

VOL 204

NO. 19

ONE SHILLING WEEKLY

WHERE SIMPLE OR COMPLICATED SCHEMES OF VENTILATION ARE INSTALLED, AND THE OPERATION IS REQUIRED, BY REMOTE CONTROL OR OTHERWISE, AND THE WINDOWS HAVE ANY OF THE FOLLOWING CHARACTERISTICS:—

- OPENING OUTWARDS
- OPENING INWARDS
- TOP HUNG
- HORIZONTAL CENTRE-HUNG
- BOTTOM HUNG
- VERTICAL PIVOT HUNG
- SIDE HUNG
- HORIZONTAL SLIDING
- VERTICAL SLIDING



The illustration shows One Set of Electrically operated Twin Tension Rod Gear with Counter-Balance Unit operating one continuous opening light, 74' 0" long x 5' 0" deep. Note the Spiral Balance Wheel fitted at the end Sprocket.

*Always Specify* **WINDOW OPENING GEAR** *for*  
SKYLIGHTS, LANTERN LIGHTS, CLERESTORY LIGHTS, FANLIGHTS, SIDE WALL  
LIGHTS IN WOOD OR METAL WINDOWS, OR IN PATENT GLAZING, ROOF LIGHTS  
AND BENCH LIGHTS IN GREENHOUSES, DAMPERS, TRAP DOORS, SHIPS SKYLIGHTS, ETC.  
HAND - OPERATED—ELECTRIC—HYDRAULIC—REMOTE CONTROL  
*by* **WILLIAM NEWMAN & SONS LTD.**  
HOSPITAL STREET, BIRMINGHAM  
GEARING DEPT BRANCH WORKS 3, WELLHEAD LANE, PERRY BARR, BIRMINGHAM

# Barry's Heavy Ruboleum

MONARCH OF THE LINOLEUM WORLD SINCE 1907



*Reproduction of a RUBOLEUM Floor in a Food Store*

**HEAVY RUBOLEUM** is a superfine linoleum 6.70 mm. thick (approx.  $\frac{1}{4}$ " ), was first produced by us in 1907, and still holds its position of the highest merit as a floorcovering because of its properties of hygiene, resilience, durability and decorative colourings.

**HEAVY RUBOLEUM** is produced in 35 beautiful and popular colours, plain and marble effects.

**HEAVY RUBOLEUM** is especially produced for use on Ship decks and Public buildings. It is available through high-class retail Furnishers and Contract Flooring Specialists.

**HEAVY RUBOLEUM** is the solution to your flooring problems

SAMPLES ON APPLICATION TO THE EXCLUSIVE MANUFACTURERS

**BARRY, OSTLER & SHEPHERD, LTD.**  
**KIRKCALDY • SCOTLAND**

# **OVER FIFTY INDUSTRIES CONCERNED WITH BUILDING IN**

## **THE EXHIBITION**

is the largest event of its kind in the world, nowhere else can there be seen under one roof so extensive a range of modern building materials, plant and equipment occupying an area of 350,000 square feet or 60,000 square metres with eight miles or 13 kilometres of exhibits.

is supported by all the Government Departments concerned with building, by the Royal Institute of British Architects, The Royal Institution of Chartered Surveyors and many professional and industrial organisations.

is the best means of keeping abreast of all the most recent techniques and developments in the Building Industry, it attracts visitors from every country in the world.

## **NOVEMBER 16—30 OLYMPIA LONDON**

### **60 YEARS OF PROGRESS**

Since the first Building Exhibition, which was held in 1895 under the direction of the present organisers, the Exhibition has made enormous progress and is now known throughout the world.

### **THE 1953 EXHIBITION**

was the largest and most comprehensive ever held, 450 firms occupying over 600 stands.

Each successive Exhibition has not only kept pace with the phenomenal advances made in new building methods, but the 50 or more industries which contribute, regard the Exhibition as the place to introduce new techniques to visitors who attend from every country in the world.

### **ARCHITECTS, BUILDERS, BUYERS**

and representatives of public authorities realise the advantages to be gained by seeing under one roof the latest methods and ideas which the British building industry has to offer the world.

An Exhibition, which is held once every two years, allows time for manufacturers to develop new ideas and exhibits of outstanding importance.

Everyone concerned with building operations of any kind should take the opportunity which the Exhibition provides of acquiring a more efficient and intelligent approach to modern problems and of achieving higher productivity in building.

### **VISITORS FROM OVERSEAS**

will receive a cordial welcome and are invited to write for tickets and any further information.

**ARCHITECTS AND BUILDERS FROM ABROAD  
WHO MAY WISH TO VISIT THE EXHIBITION ARE INVITED TO WRITE FOR DETAILS**

# THE BUILDING EXHIBITION, 1955

## EXHIBITS INCLUDE:—

*Air Compressors.*

*Bricks—Tiles & Machinery.*

*Canteen & Kitchen Equipment*

*Clay Sand & Lime.*

*Concrete & Cement Products.*

*Concrete Plant.*

*Contractors' Plant.*

*Cranes—Hoists.*

*Diesel Engines.*

*Earth Moving Equipment.*

*Electrical & Gas Equipment.*

*Excavators.*

*Fire Prevention.*

*Floors & Flooring.*

*Glass.*

*Heating Appliances.*

*Insulation.*

*Joinery.*

*Ladders, Trucks & Barrows.*

*Locks, Door Furniture.*

*Lighting.*

*Metal Windows, Doors & Partitions.*

*Metalwork.*

*Mechanised Plant.*

*Paints & Painting Equipment.*

*Plaster & Plasterboards.*

*Plumbing.*

*Prefabricated Structures.*

*Pumps.*

*Refrigeration.*

*Roofing Materials.*

*Sanitary Equipment.*

*Scaffolding.*

*Steel.*

*Stone & Marble.*

*Timber.*

*Tools—Hand & Powered.*

*Tractors.*

*Wallboards.*

*Water supply.*

*Woodworking machinery.*

## EXHIBITORS

Many of the 600 firms provide displays of working machinery, plant and equipment covering every phase of activity in modern building. Individual firms exhibit their techniques, materials and manufactured goods in more than fifty associated industries.

## TECHNICAL COLLEGES & SCHOOLS

Students and apprentices will be working in the Exhibition giving frequent demonstrations.

## NEW BUILDING TECHNIQUES

Reviews of new techniques, prefabricated buildings of all kinds including dwellings, systems for industrial buildings, hospitals, schools and other purposes may be seen.

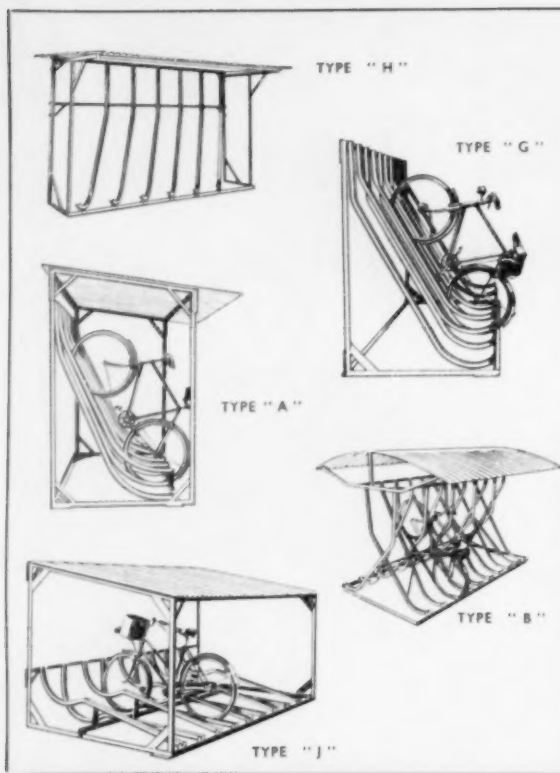
## TIMBER

A number of timber producing countries will provide displays of the uses of timber in building.

THE BUILDING EXHIBITION

32 MILLBANK

LONDON, S.W.1



## THERE IS AN **ABIX** CYCLE STAND TO SUIT EVERY REQUIREMENT

ABIX Cycle Stands are constructed of steel throughout, stove enamelled green. Roof sheeting is normally of galvanised corrugated sheets. If required, sheeting can be supplied in Aluminium, Asbestos, or Robertson Protected Metal.

● THERE ARE 26 DIFFERENT TYPES FROM WHICH TO CHOOSE

OVER A QUARTER OF A CENTURY'S  
EXPERIENCE IN CYCLE STAND MANUFACTURE

Please write for Illustrated Catalogue to:—

**ABIX** (METAL INDUSTRIES)  
LIMITED

Factory Equipment Specialists

Taybridge House, Taybridge Road, Battersea, London,  
S.W.11

Tel.: BATTERSEA 8666/7 Telegrams: ABIX, BATT, LONDON

### EVERY ARCHITECT AND BUILDER SHOULD HAVE THIS CATALOGUE!

- DOOR FRAMES
- FRENCH CASEMENTS
- PIVOT HUNG WINDOWS
- WINDOWS OF SPECIAL CHARACTER
- TRADITIONAL WINDOWS AND BAYS
- CONTEMPORARY WINDOWS AND BAYS

We shall be pleased to welcome you at the Building Exhibition on Stand No. 424 in the Grand Hall Gallery.

**SEND FOR YOUR COPY NOW**

**H. C. JANES LTD**  
Joinery Manufacturers  
BARTON • BEDFORDSHIRE  
Telephone : Hexton 364

# DON'T MISS THE Smoke Free FLAVEL APPLIANCES!

See them on  
**STAND No. 266**  
at the  
**BUILDING  
EXHIBITION**  
November 16th-30th

During this year's Building Exhibition the interest of Builders and Architects alike will be centred on the problem of Smoke Abatement. The Clean Air Bill is expected to become law soon — *now* is the time to anticipate its requirements. Flavels (the people who pioneered smoke abatement in the 1920's) are introducing on their Stand some of the most beautiful and efficient domestic appliances ever produced. Don't miss this opportunity of seeing them on Stand No. 266 — your clients will be looking for them in the coming months.

## FLAVELS WILL DISPLAY:

*The NEWBOLD and Flavel SEYMOUR*

*Solid Fuel Grates*

*The FULHAM Finned Back Boiler Set*

*The METRO Boiler Unit with NEWBOLD  
Grate*

*The FLAVEL Boiler Set*

*The New COTSWOLD Solid Fuel Cooker/  
Water Heater*

*The CAMBERWELL and PANEL Gas Fires*

*The FLAVEL Gas Heated Clothes Dryer*

*The Flavel NATIONAL Instantaneous Gas  
Water Heaters*



## See a FLAVEL first

SIDNEY FLAVEL & CO. LTD., LEAMINGTON SPA • Telephone: 100 (Head Office) 3991 (Sales Office) • Telegrams: FLAVELS

B1

# And now— Copper Tubes from Kirkby

The whole range of I.C.I. copper tubes is now being made at Kirkby Works, near Liverpool—the largest copper tube mill in the British Commonwealth. Kirkby's main mill—more than seven acres under one roof—is the largest single production unit in the British non-ferrous industry and houses the

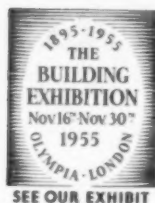
most powerful tube-drawing machinery in the world.

I.C.I. copper tubes have long played a leading part in every branch of engineering. With the improved production methods at Kirkby, I.C.I. is able to offer even better service to industry at home and abroad.

**COPPER TUBES** for gas, water and waste services, radiant panel heating, locomotives' and ships' services, refrigerators, chemical and general engineering.

IMPERIAL CHEMICAL INDUSTRIES LIMITED, LONDON, S.W.1





# Steve

## IS WELL IN THE PICTURE

Many a TV celebrity would, our photographer reckons, be glad to swap faces with the photogenic Harold Stevenson\*, the happy Lancashire man who has taken over Williams & Williams Maidstone area.

'Steve' started learning the metal windows business 19 years ago and from 1946-1951 was Williams & Williams Fixing Supervisor in the North and Midlands and from 1951 Fixing Manager in the Southern Division, covering London, the South and South West.

His favourite recreation is walking the British Countryside. Three times he has walked up Snowdon . . . and three times seen only mist when he got there.

Now he'll be getting a clear view of architects—who, we're confident, will like not only his face, but the competent service he and his team of representatives, draughtsmen, estimators and window fixers are determined to give them.



\*Mr Harold Stevenson, Williams & Williams Ltd.,  
23 Lower Stone Street, Maidstone, Kent (51750)

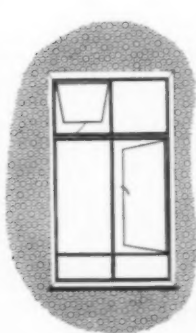
*Other Offices at: Belfast (23762) Birmingham (Shirley 3064) Bristol (38907) Bromley (Ravensbourne 6274) Cardiff (27092) Crawley (2200) Glasgow (Douglas 0003) Hertford (3969) Leeds (21208) Liverpool (Central 0325) London (Sloane 0323) Manchester (Blackfriars 9591) Newcastle-upon-Tyne (21353) Norwich (24393) Nottingham (52131) Reading (50291) Sheffield (51594) Southampton (26252)*

**METAL WINDOWS**

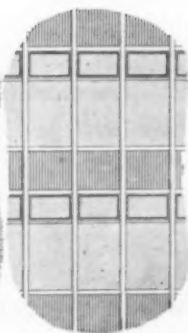
**WILLIAMS & WILLIAMS**



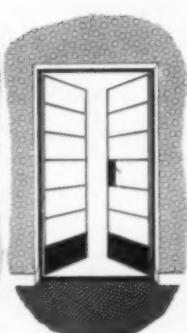
Member of the Metal Window Association



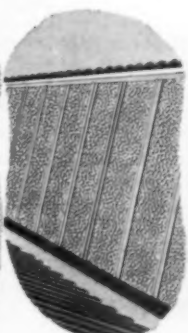
Metal Windows



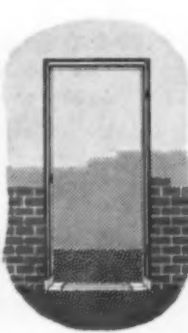
Wallspan Curtain Walling



Metal Doors



Aluminex



Metal Door Frames

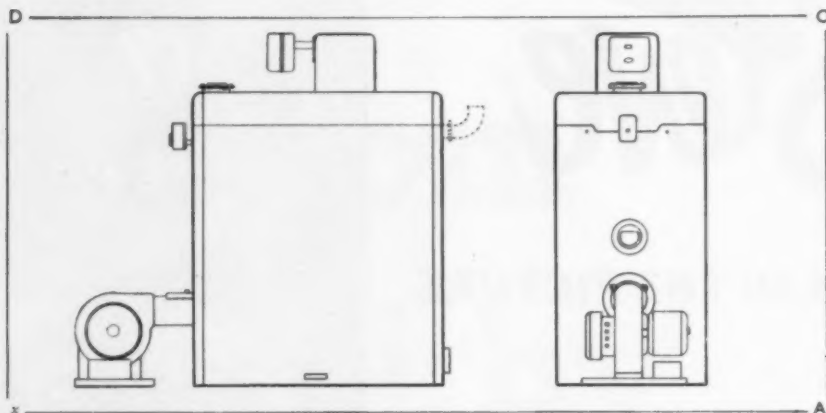


Rotten Toilet Cubicles

# CENTRAL HEATING AND HOT WATER SUPPLY

## THEOREM 1

That if oil is the fuel to be used for the supply of hot water for central heating and domestic purposes it is most economical to employ a  
**Potterton Oil-Fired Boiler.**



**Given :**

A Potterton Oil-Fired Boiler D O A x.

**Construction :**

Designed specifically for oil firing.

**Required to Prove :**

That, given oil as the fuel, there is no more economical means of supplying hot water for central heating and domestic use.

**Proof :**

The cost of any heating service is the sum of :

- i. the cost of the appliance and its installation.
- ii. the running costs.
- iii. the cost of service and maintenance.

**In the case of a Potterton Oil-Fired Boiler**

- i. it is supplied as a complete unit thus ensuring minimum fixing costs.
- ii. it achieves a true working efficiency of 80% of the heat from the oil transferred to the water (the maximum efficiency that can be used in any boiler without the risk of condensation).
- iii. it has fully automatic oil burners and controls, and requires very little maintenance.

∴ If oil is the fuel to be used for the supply of hot water for central heating and domestic purposes it is most economical to employ a Potterton Oil-Fired Boiler.

Q.E.D.

**Rider:** The output of any DOA series Boiler is given by:—

$$\text{B.Th.U. hr} = 36000 x$$

where  $x$  = number of sections and can have integral values of from 3 to 8.

We will be very pleased to elaborate on this theorem if you will write to  
Thomas De La Rue & Co. Ltd., 20/30 Buckhold Road, Wandsworth, S.W.18.



**POTTERTON**

*Oil-Fired*

**BOILERS**

This impressive fortress was built by Richard  
Coeur-de-Lion in 1196-7 for the defence of Normandy against  
the French. It presented an almost impregnable  
barrier to the enemy but its heavily laden defenders must  
have felt some discomfort when climbing the  
innumerable precipitous steps leading to its  
ramparts and towers.

## the keep of the chateau Gaillard

*Comfortable and efficient  
circulation is achieved in building  
today using lifts and escalators by*



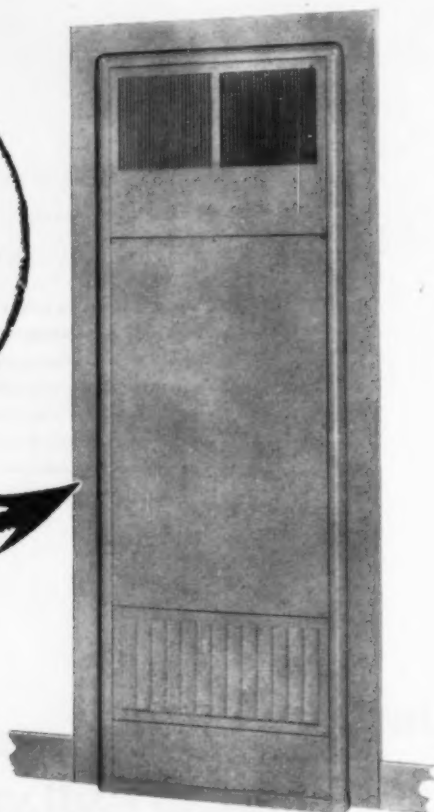
# J & E Hall *Limited*

*Lift, Escalator and Refrigerating Engineers*

DARTFORD KENT

**NEW TEMPAFLEX  
SURROUND CUTS  
BUILDING TIME  
BY HOURS**

**NO BUILDING IN  
NO GRILLE SEATINGS  
NO JOINERY  
LIBERAL WORKING TOLERANCE**



Illustrations show Model T20, one of a range of 21 models described in our brochure Modern Space Heating by Tempaflex—yours on request.



This latest Tempaflex development provides a quick and effective method of installing Tempaflex Space Heaters. The metal surround, which is firmly retained independently of the building fabric, allows the builder to work to plus or minus 1" on face dimensions. Installation is obviously much quicker and a neat and effective finish is assured.

**MORE THAN 500 BUILDINGS THROUGH-  
OUT GREAT BRITAIN HAVE BEEN EQUIPPED  
WITH TEMPAFLEX MODERN SPACE HEAT-  
ING CABINETS**

# **FLEXAIRE**

**LIMITED**

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Tel: VICTORIA 2006/7

## *Branch Offices*

**BIRMINGHAM** Flexaire Ltd., 72 Chain Walk, Birchfield Road, Birmingham, 19. Tel.: Northern 2772

**MANCHESTER** Flexaire Ltd., 12, St. Ann's Square, Manchester, 2. Tel.: Deansgate 7552

**NEWCASTLE-ON-TYNE** The Northern General Supplies Co. (Newcastle) Ltd., 6, Eldon Square, Newcastle-on-Tyne 1. Tel.: Newcastle 21030

**GLASGOW** Flexaire Ltd., 25, Wellington Street, Glasgow, C.2. Tel.: Central 9001

**LEEDS** J. S. Bell, "Bracmar", Leeds Road, Oulton, Leeds. Tel.: Rothwell 3242

**BELFAST** William H. Leech, 414 Ravenhill Road, Belfast. Tel.: Belfast 41787

**DUBLIN** P. J. Casey, 38 The Rise, Mount Merrion, Dublin. Tel.: Dublin 882587.



# FIRE-

*what is the menace?*

A building may be inconvenient, ugly, noisy or unhealthy, without being more than a nuisance to its occupants — BUT IF IT IS A FIRE-TRAP, IT IS A **PUBLIC MENACE.**

*which is the best wall lining?*

"Plaster, being made of sand and calcium sulphate is incombustible and highly fire-resisting as a material. When it is reinforced and thereby held in position by wood laths or better still by metal mesh, its resistance is valuable... Fire has been known to rage fiercely for a time in the flue-like spaces inside a stud partition while the plastered faces remained intact." From 'Fires in Buildings — the behaviour of materials in fire' by Bird & Docking.

*why is Gypsum plaster the best?*

**FIRE RESISTANCE.** "MURITE" Plasters when set revert to Gypsum. This mineral contains 20% of chemically combined water which must be driven off before dangerous temperatures can be reached. This water barrier is one of the reasons why 'MURITE' Gypsum Plasters have such excellent fire-resisting properties.

## GYPSUM PLASTER

**QUITE INCOMBUSTIBLE  
FULLY FIRE RESISTING**

**CAFFERATA & CO. LTD.**

NEWARK · UPON · TRENT, NOTTS.

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TELEGRAMS: "CAFFERATA NEWARK"



## For your Venetian Blinds



SPECIFY

*Luxaflex*  
REGISTERED TRADE MARK

ALUMINIUM SLATS AND VINYL PLASTIC TAPES

For any application, for any style of architecture, with any interior decor, be sure to recommend Venetian Blinds made of Luxaflex materials. They are the only window treatment for perfect control of light and air, they assure architectural and decorative beauty, give maximum wear and need minimum maintenance. Only Luxaflex offers you a choice of 165 beautiful colour combinations. Write for additional information and for the name and address of a Venetian Blind manufacturer using Luxaflex slats and tapes to Hunter Douglas (Great Britain) Ltd.

HUNTER DOUGLAS  
(GREAT BRITAIN) LTD.  
10 DRAKE STREET,  
RED LION SQUARE,  
LONDON W. C. 1  
TEL: CHANCERY 8634



### Easy cleaning

A damp cloth wipes away even the most stubborn stains. The plastic tapes always keep their freshness, never stretch, shrink or discolour.



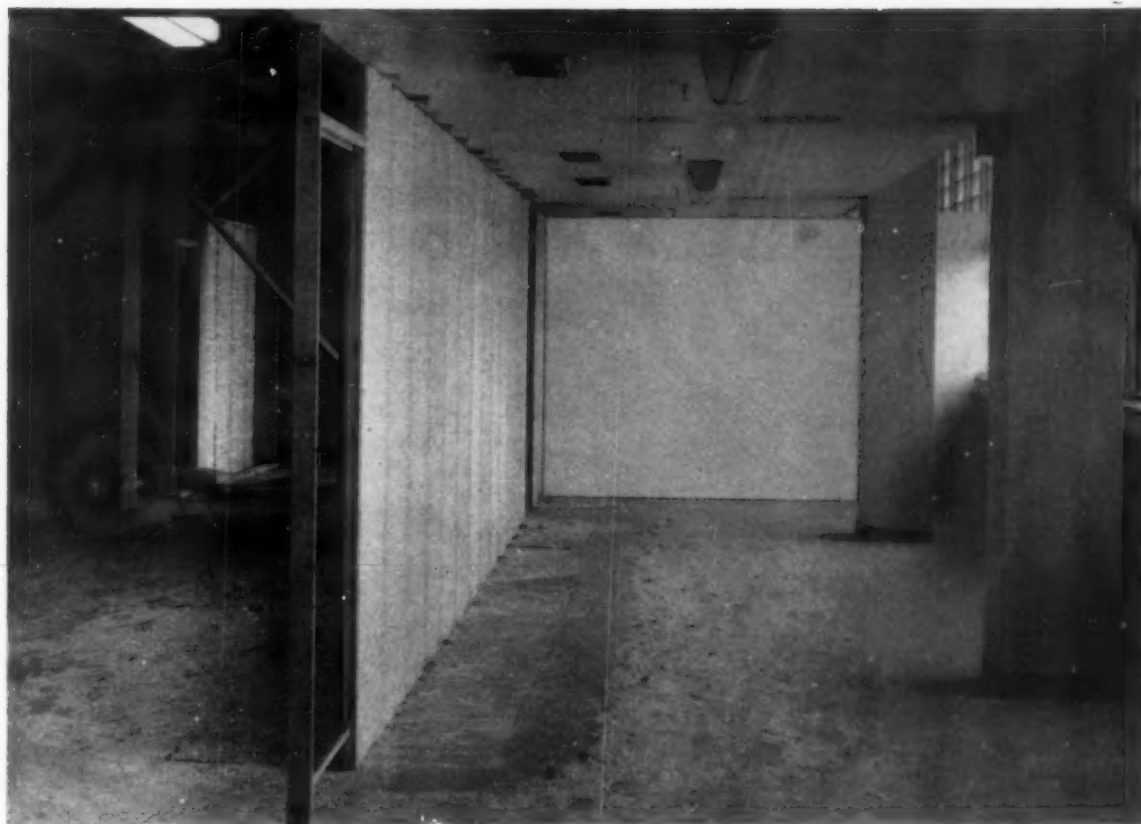
### Snap-back aluminium slats

Duritized to snap back ruler-straight, even when bent to a 90° angle. Baked-on finish cannot rust, chip, crack or discolour!



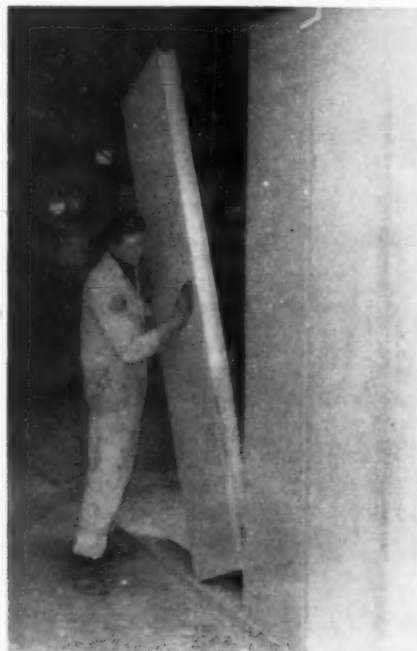
### Insist on this Trade Mark

Be sure the blinds you specify carry the Luxaflex "visible-invisible" trade-mark on the slats. It is your guarantee of unrivalled quality.



B.O.A.C. HEADQUARTERS, LONDON AIRPORT.

Engineers: Sir Owen Williams and Partners. Contractor: W. & C. French Ltd.



Bellrock tongued and grooved panels

The photograph above shows 2½" thick Bellrock Panels being erected on a *finished floor surface*. Note the absence of mess and how the panels are wedged to ceiling to await finishing. The erectors—erect dry—wedge or clamp and the finisher follows on.

# BELLROCK

## TONGUED & GROOVED P R E - F I N I S H E D D R Y W A L L S

All enquiries to:

**BELLROCK GYPSUM INDUSTRIES LIMITED**  
200 Westminster Bridge Road, London, S.E.1

Cables: BELROCK LAMB, LONDON Telephone: WATerloo 3461/5

The BELLROCK PANEL and its system of manufacture is protected by Patents and Patent Applications throughout the world


---

STAND K229 GRAND HALL

## RIGHT FOR EACH PURPOSE



**TANKING**

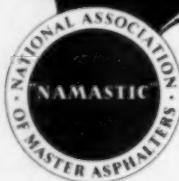


**ROOFING**



**FLOORING**

For Roofing, for Damp Proof Coursing and Tanking, for Flooring and Paving, wherever, in fact, the highest standard of results is called for, you can specify the appropriate 'NAMASTIC' Asphalt with complete confidence. There can be no finer recommendation of the quality and consistency of this British-made Asphalt than the impressive list of important contracts carried out with 'NAMASTIC' over the past 20 years.



# 'NAMASTIC'

## The Standard Asphalt for Building

The Association has a nation-wide membership, made up of the following:

Associated Asphalt Co. Ltd.  
Bolton and Hayes Ltd.  
Bolton Stone Concrete & Asphalt Co. Ltd.  
William Briggs & Sons Ltd.  
The British & Natural Rock Asphalt Co.  
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Davies Bros. (Asphalters) Ltd.

J. Dunlop & Co. (Asphalt) Ltd.  
Durable Asphalt Co. Ltd.  
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For full information about N.A.M.A. and free technical advice on asphalt for Building, apply to the Secretary:

**NATIONAL ASSOCIATION OF MASTER ASPHALTERS • 202 BISHOPSGATE • LONDON • E.C.2**  
Telephone: AVENUE 8484 Established 1933



ESTATE  
FOR THE  
HOUSE

# ELLARD

## SLIDING DOOR GEAR



RADIAL  
FOR THE  
GARAGE

FOR  
HOUSING  
ESTATES

FOR THE  
PRIVATE  
RESIDENCE



ESTATE  
FOR THE  
HOUSE

ELLARD Sliding Door Gear is ideally suited for use on large housing estates and for the distinctive private residence. ELLARD "Estate" Gear is silent—easy running—troublefree, and has elegant appearance. ELLARD "Radial" Gear for garages and out-houses, provides smooth-running action, gives maximum space, and is easy to fix. Both these well-known types of ELLARD Door Gear are moderate in price and immediate delivery can be obtained from large ironmongers and builders' merchants throughout the country.



RADIAL  
FOR THE  
GARAGE

SEE OUR STAND

**496 & 498**

BUILDING EXHIBIT, OLYMPIA

**CLARKE ELLARD ENGINEERING CO. LTD.**

WORKS ROAD · LETCHWORTH · HERTS · TELEPHONE 613/4

# LANDMARKS IN STEEL

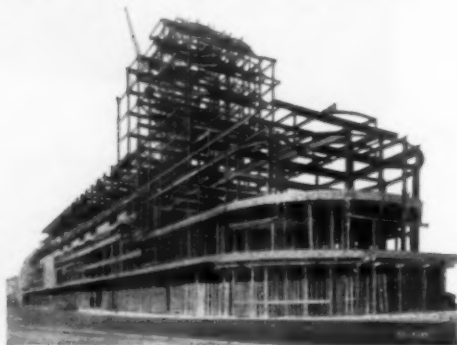


## **STEELWORK** *for* **MODERN LIVING**

Dominating not only by reason of its size, but by its bold conception, this great block of flats and shops on the front at St. Leonards-on-Sea is a fine example of modern construction, with Steelwork by—



**Architects:**  
Dalglish & Pullen F/A.R.I.B.A.  
17 Fitzhardings Street,  
London, W.1.  
**Civil Engineers:**  
S. W. & D. E. White,  
9 Victoria Street, London, S.W.1.  
**General Contractors:**  
Griggs & Son Ltd.,  
56 Victoria Street, Westminster,  
London, S.W.1



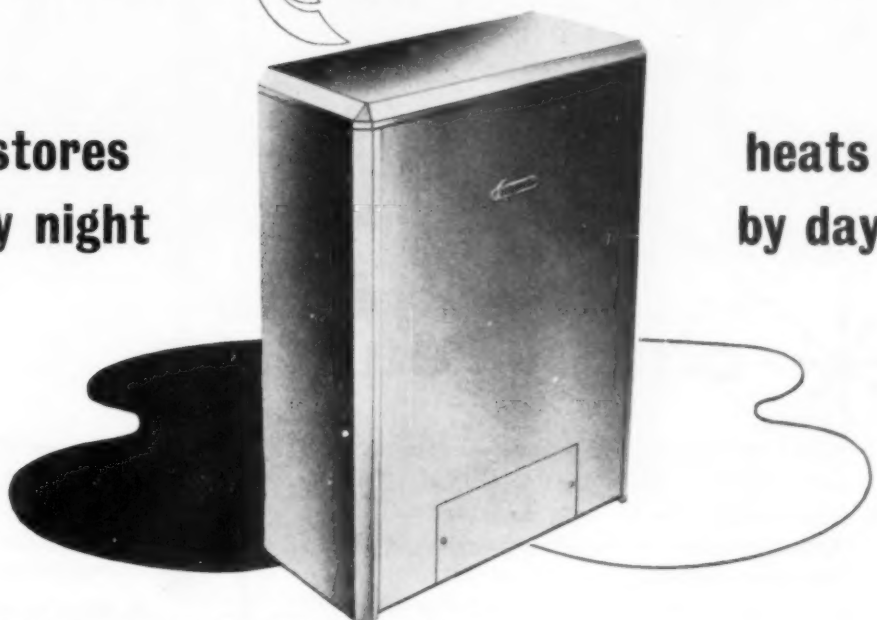
**Registered Office & Works: MANCHESTER 17**  
**Telephone: TRAFFORD PARK 2341 (10 lines)**

**London Office: 68 Victoria Street, S.W.1. Telephone: VICTORIA 1331/2. Technical Offices: Birmingham and Loughborough.**

**Cheaper Electricity** ▶ **Saving up to 50%**  
**Capital Costs Cut** ▶ **by as much as 75%**  
**Smog Cut** ▶ **by 100%**

with the **Nightstor heater**

**stores  
by night**



**heats  
by day**

*No other heating system has all these advantages:—*

- ★ Clean in operation. Nightstor heaters are definitely anti-smog. They keep the atmosphere free of fumes and smoke.
- ★ Warm offices or workrooms on arrival. With Nightstor, premises are warm day and night.
- ★ Installation is simple and inexpensive. Each Nightstor is a compact unit which can usually be installed without any rearrangement of existing plant, fixtures and furniture.

- ★ No stoking . . . no worries about obtaining fuel supplies, especially in the coldest weather.
- ★ Eliminates the possibility of burst pipes as premises are constantly warm.

*The most modern, effective and economical way of heating commercial and industrial buildings, workrooms, offices, waiting rooms, libraries and schoolrooms. Write for publication HO 2885 for full details.*

A **S.E.C.** PRODUCT

**Nightstor** heater

**Stores heat at night for use next day**

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2

# introducing



## chain reaction

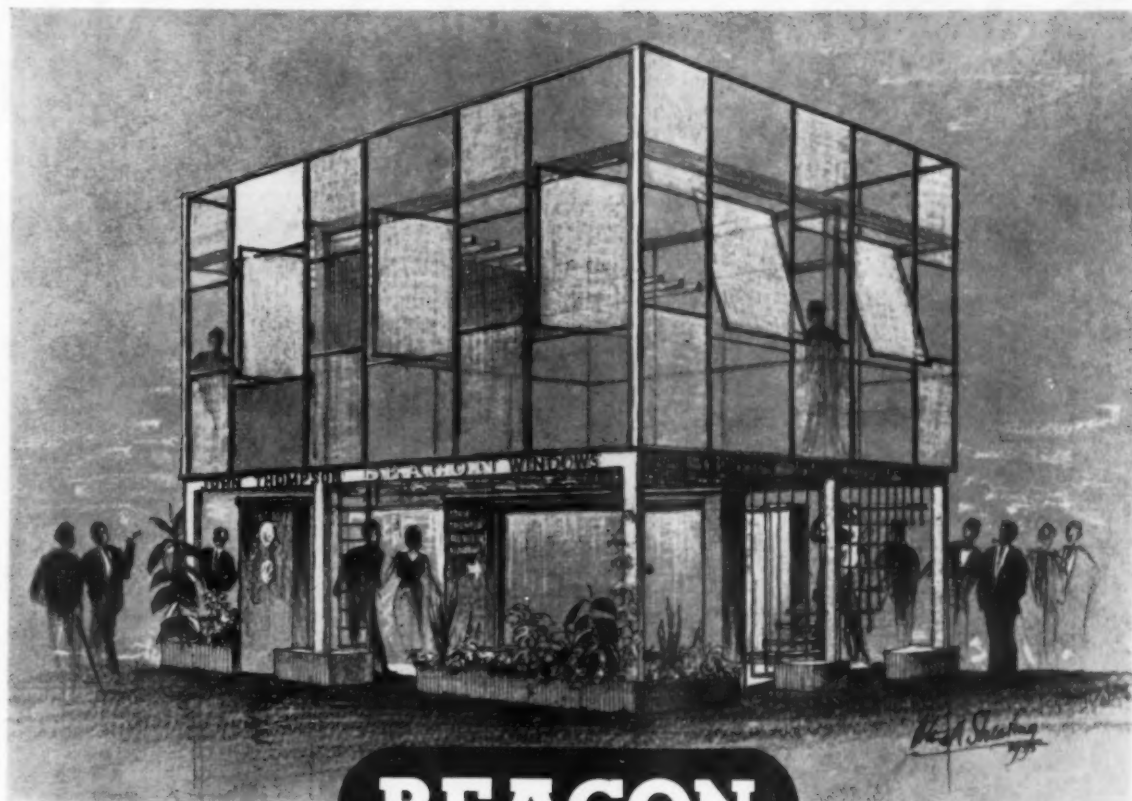
United Merchants proudly introduce the newest addition to their range — the Unimer Plastic Well-Bottom Cistern. Its up-to-date design and its durability make sure that it will be well received. Costing no more than old-fashioned cast iron, plastic cisterns have many advantages. As well as being smarter and cleaner, they are silent and need no painting. Modern equipment for the modern home, plastic cisterns will last a lifetime — and, what's more, fit existing systems when used as replacements.

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# PATENT GLAZING



*Roof of new assembly shop at Daimler Radford Works. Architects: Wood & Kendrick & Williams, F.F.R.I.B.A. Chartered Architects.*

To provide the large amount of daylight essential to these two workshops was a major problem of design and construction. In both cases, however, difficulties were overcome by the effective use of patent glazing.

For the assembly shop at the Radford Works, 120,000 feet super of aluminium patent glazing was used to provide the roof

lighting, and ventilation was provided by 50 continuous opening lights operated by electrically controlled double tension gearing; while 50,000 feet super of aluminium patent glazing was used for the roof of the assembly shop at the Waverly Works. Both workshops are fine examples of the use of patent glazing in the construction of large industrial buildings.

# SPECIFICATIONS

**LARGE RUNS OF PATENT GLAZING IN THE  
ASSEMBLY SHOPS AT THE DAIMLER RADFORD  
WORKS AND THE B.S.A. WAVERLY WORKS**



*Roof of new assembly shop at B.S.A. Waverly Works. Architect: Holland W. Hobbiss, F.R.I.B.A.*

ISSUED BY  
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## PLIMBERITE BUILDING BOARD

At the BUILDING EXHIBITION

STAND No. H.178

**SIZE: 8 ft. x 4 ft. THICKNESSES:  $\frac{1}{2}$  in. and  $\frac{3}{4}$  in.**

### PARTITIONING AND WALL LINING

Partitions can be single-skin or double-skin; in either case the boards are pinned to posts at about 4 ft. centres, and no other battening is required. For wall lining, construction is similar, using  $\frac{1}{2}$  in. board over stud framework at 4 ft. centres. Insulation is similar to that of timber.

### THE PLIMBERITE REBOND PARTITIONING SYSTEM

This system has been designed to provide a demountable double-skin partition of great rigidity and high insulation value. Rebated-edge  $\frac{3}{4}$  in. PLIMBERITE boards are slotted into grooved timber posts which are held in position by PLIMBERITE REBOND screw jacks. Full details and working drawings are contained in the PLIMBERITE REBOND Booklet, obtainable on request.

### FLOORING

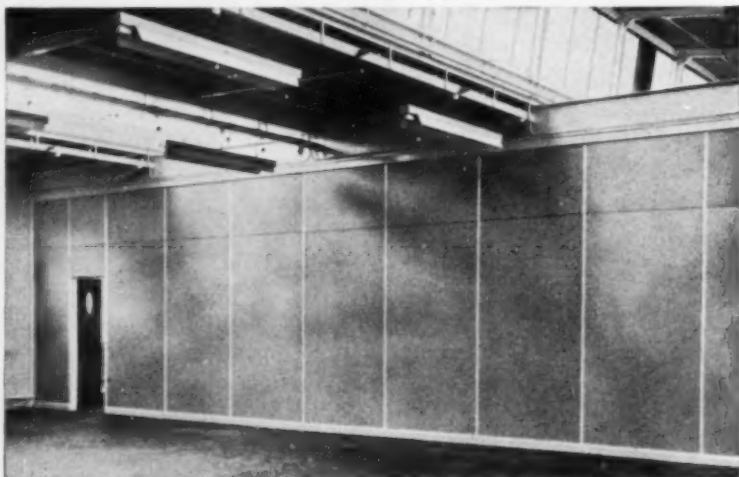
For an easily laid, hard-wearing floor, full size  $\frac{3}{4}$  in. PLIMBERITE boards may be nailed over joists at 16 in. centres, or boards of either thickness laid over a solid sub-floor. Plugs or fillets should be let into concrete, and the boards screwed down at 24 in. centres; waterproof felt should be laid between the screed and the boards to prevent rising damp.

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The photograph above shows PLIMBERITE Rebond Partitioning in the British Van Heusen Company's factory at Bishops Lydeard, Taunton. Architect: Steer & Shirley-Smith A.I.A.R.I.B.A. Contractor: Stansell & Sons (Taunton) Ltd.

### DECORATION AND TREATMENT

In general, the surface should be primed, using wood primer, before decorating with distemper, emulsion paint, or oil paint. If it is desired to fill the surface, this should be done after priming. Oil and spirit stains can also be used, as well as many other special preparations designed for treating wood.

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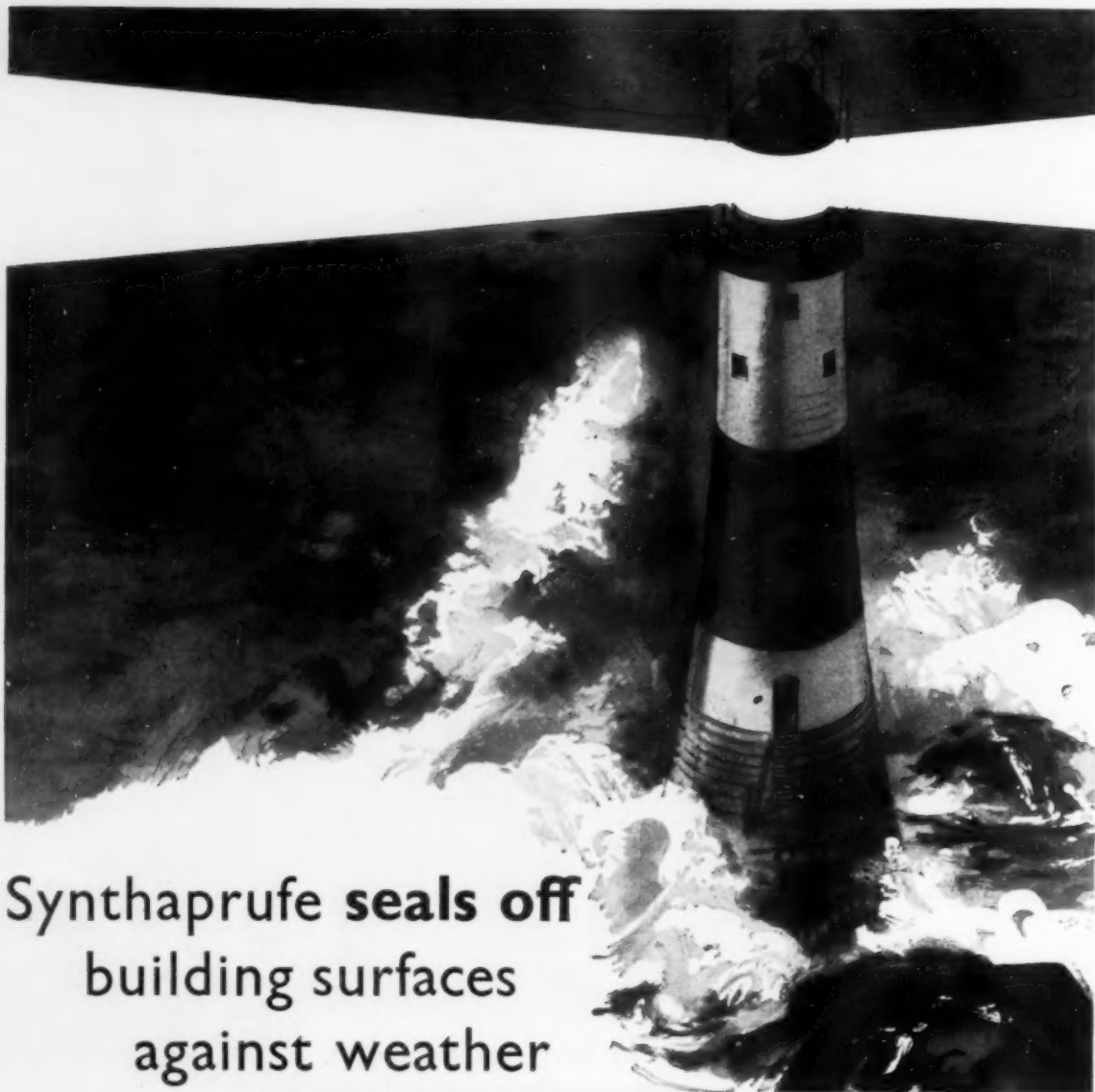
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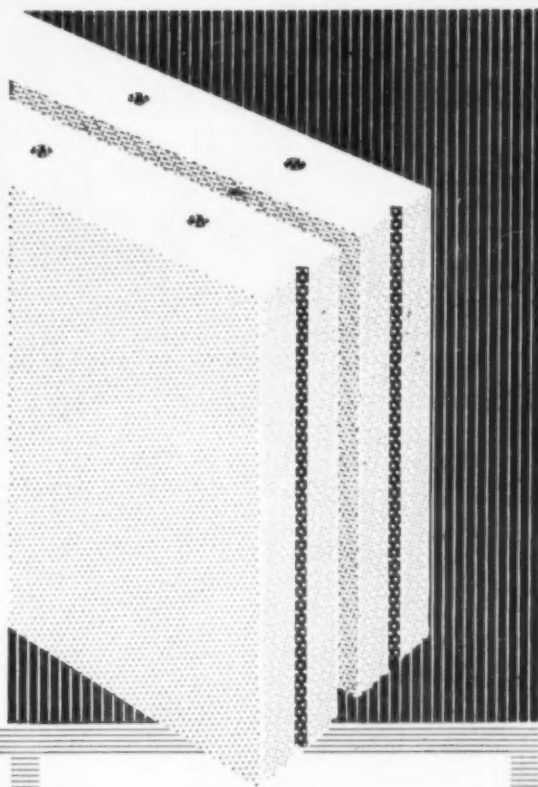
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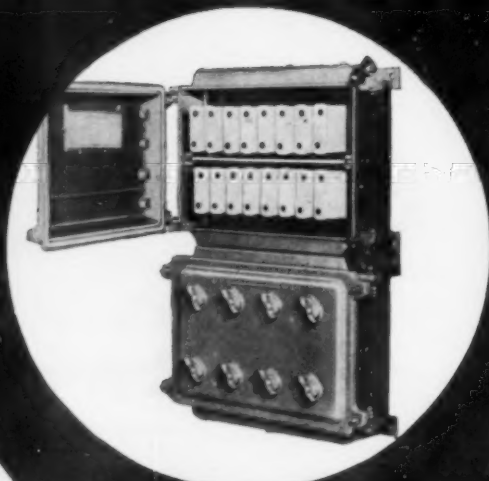
**LEEDS**  
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**LIVERPOOL**  
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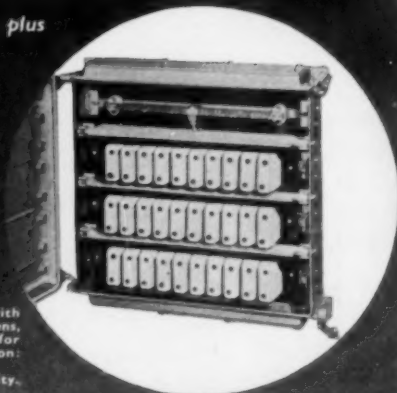
**BELFAST**  
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# Here, there and everywhere . . .

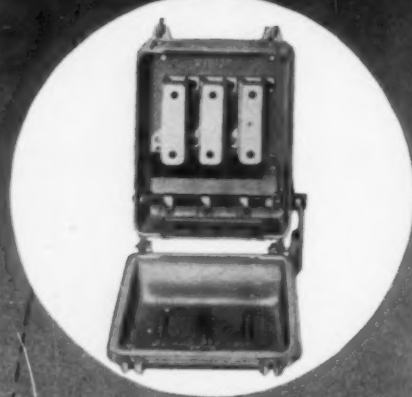
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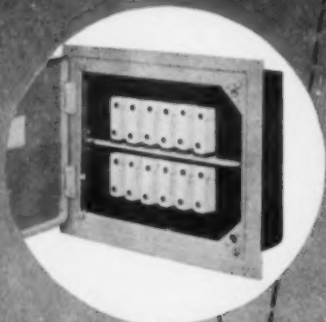
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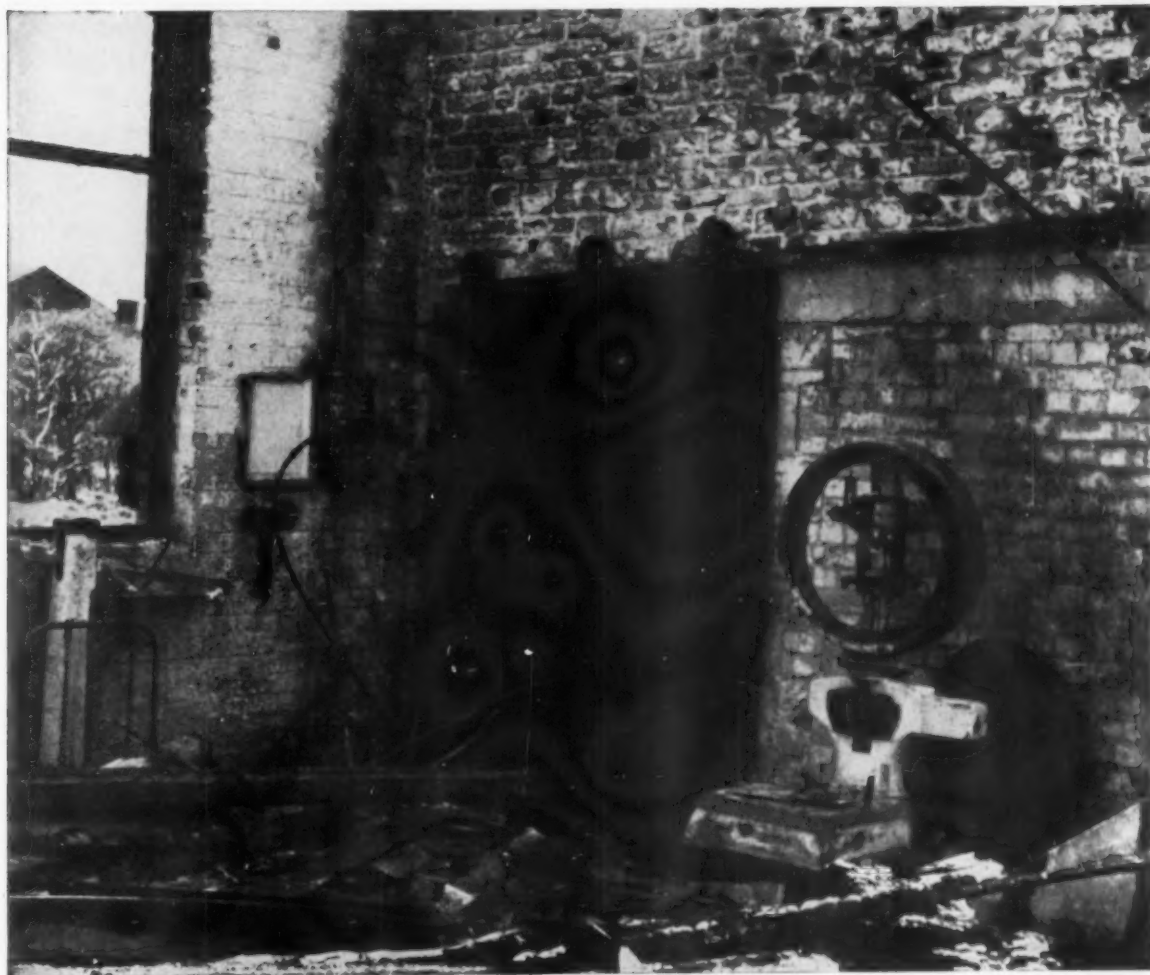
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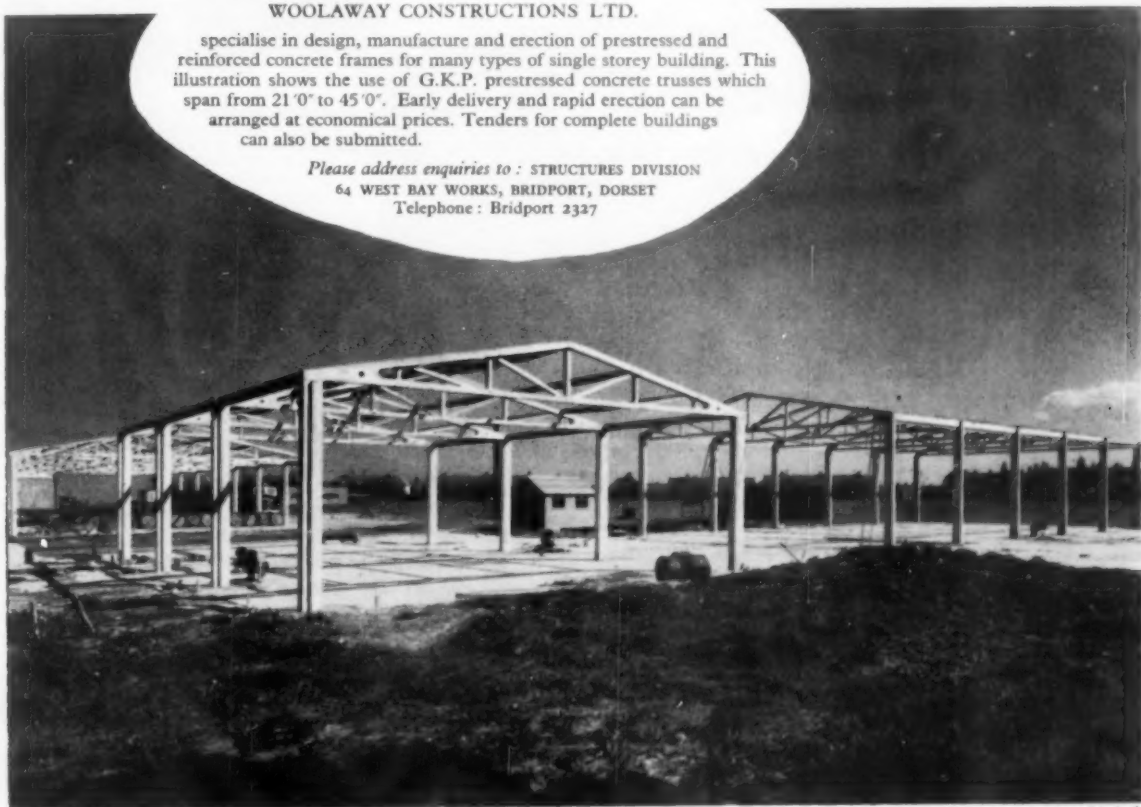


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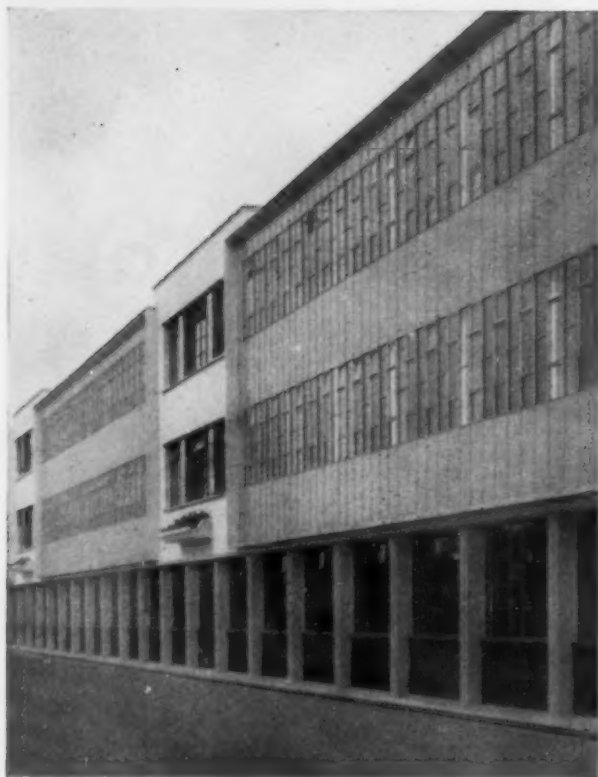
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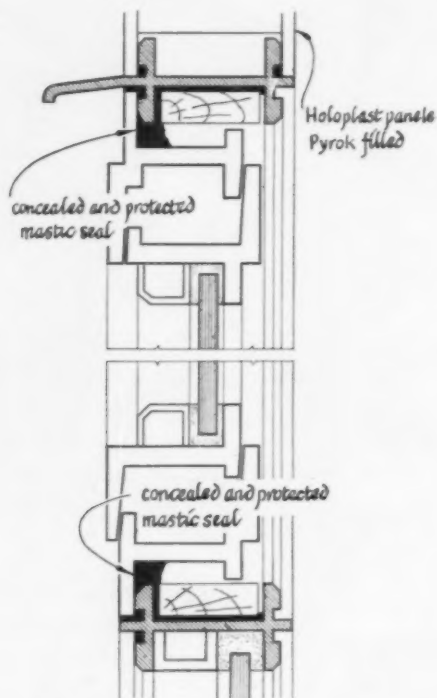


*illustration by courtesy of British Cellophane Limited*



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De Havilland Aircraft Co. Ltd., Hatfield, Herts.

ARCHITECTS: Messrs James M. Munro & Son, B.Sc., A.R.I.B.A.

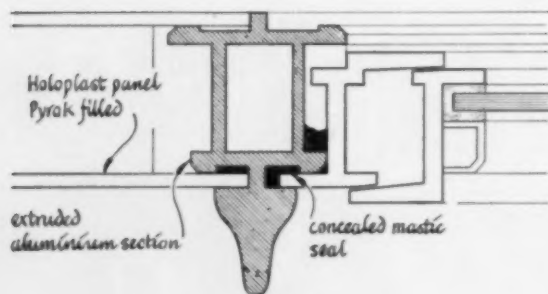


Typical vertical section showing use of specially designed aluminium sections

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Typical sectional plan

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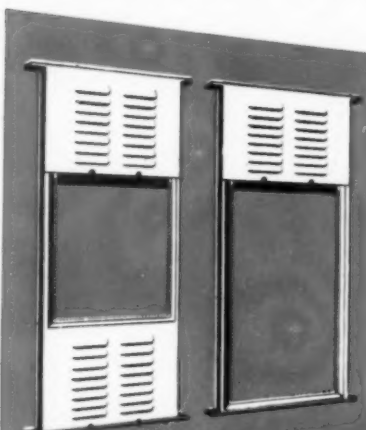
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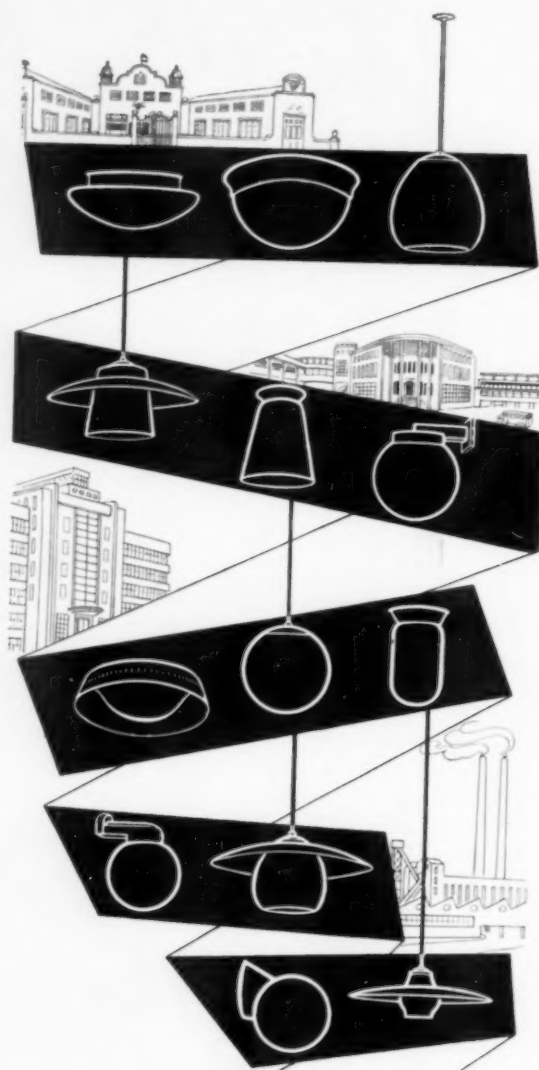
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# THE ARCHITECT & BUILDING NEWS

10 November, 1955

The "Architect and Building News" incorporates the "Architect," founded in 1869, and the "Building News," founded in 1854. The annual subscription, inland and overseas, is £2 15s. 0d. post paid: U.S.A. and Canada \$9.00

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*This model of Soho as it might be will be on view at the Exhibition*

## **The Building Exhibition**

**A**T noon next Wednesday, the Minister of Works, the Rt. Hon. Nigel Birch, M.P., will be opening the 1955 Building Exhibition. The P.R.I.B.A., Mr. C. H. Aslin, who is President of the Exhibition, will be in the chair.

Then begins the pleasurable exercise of walking round, one eye scanning the stands, the other looking out for old friends and acquaintances, for this biennial event is the real gathering of the building clans.

This year's exhibition promises well. Six hundred firms, representing over fifty industries concerned with building, have spread their wares over 350,000 square feet of exhibition space. As usual the ministries of Works, Housing and Local Government, Fuel and Power, together with D.S.I.R., B.R.S., F.P.R.L., H.M.S.O., and other alphabetical permutations that provide us with excessive but invaluable information will be there as well.

And of course, the A. & B.N. on stand 145, Row G in the Grand Hall.

A guide to the exhibition starts on page 588.

## THE INAUGURAL ADDRESS

**Extracts from the Address by Mr. C. H. ASLIN, C.B.E., P.R.I.B.A., given at the Royal Institute on 1 November**

**T**HE Royal Institute and the Profession, like everything else in this technical age, have changed and continue to change rapidly, and it might be desirable to say something about the state both of architecture and architects.

Up to the 19th Century, architecture appears to have progressed slowly on an even keel from period to period, though perhaps the keel was more even, looked at from any history of architecture, than it was in fact, and I have no doubt that architects had more than their share of trials and tribulations than can possibly be determined by an examination of their works down the centuries. In the 19th Century the profession appears to have decided that architecture was a finite art which had reached its peak on two separate occasions—the first one in Ancient Greece, and the second in the Early English period of the Gothic. There appeared, therefore, nothing to do but to use the best decorations of these periods as a pattern with which to embellish Banks, Railway Stations, Town Halls, Hospitals, and other public buildings, and architectural discussion and dissension appeared only to circle around views as to which of the two great periods was the more appropriate to use in an industrial age. This idea was fostered by Ruskin, who held and promulgated the notion that architecture was an addition of a variety of kinds of ornament to an otherwise plain structure, which, in his view, was building and not architecture.

There have been signs during the present century that the 19th Century view was not held universally, but on the other hand no set course was visible and though it is always unwise to prophesy, it appears that at the moment it is possible to see the emergence of an architecture which represents this century. In the past one hundred odd years, buildings appear to me to have been designed generally from the exterior to the interior, the first claim being to make a monumental structure, and afterwards to fit in the internal requirements of the client. During the past half-century, this process seems to have been reversed, the first claim on the architect's ingenuity being to produce a plan for whatever building was required which would prove to be suitable for the enjoyment and satisfaction of the occupiers, and to give the best possible amenities which would enable the occupants to carry out their duties to the best advantage.

The view appears to have been held in some quarters that a functional design which satisfied the demands of the client, and with particular attention to economics, necessarily produced architecture. This view appears to me to be erroneous. There appears to be no doubt that close attention to function and cost which involves the speed of building is essential, but a good deal of attention to the aesthetic side of the programme is required, and I think that at this moment the architect recognises the aesthetic side of building has to some extent been crowded out by the necessity to concentrate on new techniques, and from now on, having arrived at the point where modern techniques are more closely understood, that the next major effort will be to provide a satisfactory aesthetic answer within the present framework. At any rate this picture appears to be accurate, and one hopes that in the next few years an appropriate modern outlook will be firmly established, and that the second half of the 20th

century will produce architecture as satisfactory to its environment and conditions of production, as those embarked upon by our predecessors.

Some members of my audience will be aware that on other occasions I have mentioned these matters before, but I am convinced that they are of such vital importance to architecture and those who engage in it, that I hope I shall be forgiven for putting further emphasis on this problem. The pattern of architecture appears to me to be being resolved, and the changes which are responsible for this movement are also taking effect in the pattern of training and work of the architect himself. At the beginning of this century the Profession was divided into two clear parts. The first part consisted of qualified architects, and by "qualified" I mean members of the R.I.B.A. who ran practices. The second part consisted of the bulk of architects who were assistants whose whole time was spent, not in designing, but in providing a pattern of helpers who worked solely on the problem of supplying assistance to the schemes inaugurated by the senior members of the profession. Since that time, two major alterations have taken place. The first is that the bulk of men and women entering the profession do so through the increased number of Schools of Architecture which have come into being. The second is that owing to Government policy which now controls a large part of the industry, large National and Local Government Departments have been formed, and the total number of architects employed in these offices is probably at least as great as those occupied in private practice.

With regard to the first change in training, almost all new architects are fully qualified in the sense that they are trained to perform the complete duties of an architect as their seniors, in the same way as a student who will ultimately go into private practice or run a public office and, therefore, the old method of using the bulk of the profession as assistants is no longer valid. The only point at which the new architect lags behind his senior is in the lack of experience. It is evident that all young architects cannot hope to obtain one or other of the various senior posts either in Local Government or private practice, and, therefore, it seems to me to be clear that the structure of the profession must be varied to allow the kind of employment which will take full account of the qualities and training of the architect, who formerly was looked upon as a permanent assistant.

I am of the opinion that Private Practice must always be sustained, and that is why some of us in Local Government employment have supplied the Private Practitioner with as much work as is possible, so that he will be available when more private money is available for doing those things where the money is not supplied by the National Government. If this course of encouraging private practice is not pursued properly, there is a danger that we shall reach a point where all architecture and building is nationalised, and this I think would be a disaster for the Profession.

This gradual change in the structure of the profession has resulted in many young men demanding that something different shall be done on their behalf and it will be remembered that quite recently the Royal Institute was faced with the demand that it should undertake Trade Union activities. It has been clearly shown, however, that

the R.I.B.A. cannot function as a Trade Union, either under its existing or any future constitution. However, that does not mean that nothing shall be done to meet the quite legitimate request of our many members in salaried employment. Members will be aware that in July the Council set up an Ad Hoc Committee under the chairmanship of Mr. Richard Sheppard, and representatives of every section of the profession, to look into this problem in particular and into the state of the profession as a whole. I understand that the Committee will be presenting some interesting proposals at an early date. While I cannot anticipate the report of the Committee or what the Council will decide when they receive it, I hope it may be possible to take such steps as will satisfy the whole body of architects and the interests of architecture, and the profession can more closely marry in with the changing conditions. I say "changing" as although we are aware that many vital changes have taken place in the structure of the profession in the last 40 years, it is reasonably certain that such changes will continue for some time to come. One of the most important things we must do is to improve the quality of the work produced by all architects. Some people are wedded to the idea that if we could get complete registration, so that all buildings would, by law, be designed by architects, we should be in a very strong position, but there is nothing in that proposal which would guarantee the production of better architecture; indeed some time ago we found upon enquiry from a large number of countries and Commonwealth States that at the present moment in the Countries which it would be generally agreed produced the best work, there was the least protection. We do not want a situation where the public is compelled to employ an architect, but wish to arrive at one where the public will so clearly recognise the virtues of architecture that they will themselves always approach an architect for any kind of work they have in mind.

Whether you automatically think of architecture as Art which has produced lovely examples of design within the last many centuries, or as a Profession which is producing modern buildings for all kinds of purposes and may be producing works of sufficient quality which may be properly classed as architecture, you may be assured that in this peculiar and changing world the architect in his dual capacity, is strangely bemused by the many changing currents which frequently cross his path.

Our lay friends who have done us the honour of coming here tonight can be assured that they are not wasting their time, because the profession of architecture is most heavily indebted to its patrons. Without their support and demands I am satisfied that it is not possible to produce architecture. When one is young it is possible to believe that the perfect architectural conception can be produced by flat sites presenting no trouble, no limited brief, and vast quantities of money. This, however, is untrue, and you need a patron with exacting demands, an irritating site, and an acute shortage of money, and more than that the stimulation which a good patron supplies, which makes the architect produce his best work.

In spite of many difficulties, some of which I have outlined, it is certain that the prime duty of this Institute is to concentrate on producing by its members, good architecture in every building entrusted to us, whether that building be tiny or large. All the other desirable, and indeed essential things such as pay and conditions will follow easily, and the patron recognises the quality he is getting for his money. When I say will follow automatically, I do not mean that they will come without any effort on our part, but I am sure that the first thing to do is to deserve them.

## EVENTS AND COMMENTS

### A.A. SYMPOSIUM, 16 NOVEMBER

I should have thought that the A.A. had chosen the wrong day for its Symposium this year. Quite a number of people who would normally be there will already have accepted invitations to attend the opening of the Building Exhibition.

The subject is interesting and important. "The Problem of Vehicles in Housing Areas." The speakers will represent engineers, sociologists, housing managers and architects. I suppose that each of these groups of people can be said to represent the motoring public as well, and I hope that they will not overlook themselves in the discussions. The Symposium is open to members and probationary members of the Architectural Association. The fee for the day is one guinea and does not include lunch.

### MODULES AT THE R.I.B.A.

Mr. Lennart Bergvall, architect SAR, Chairman of the Swedish Commission on Modular Co-ordination, will read a paper at the R.I.B.A. on Tuesday, 15 November. His title will be "Modular Co-ordination—an industrial tool". The meeting is being organised by the Modular Society.

Mr. Bergvall will talk about the trend towards industrialisation in the building industry in all countries. He will describe the development of modular co-ordination in standardisation work in Sweden and will show pictures of a building system invented jointly with Mr. Erik Dahlberg and which has been used in the construction of 1,000 homes. This is a complete modular system and is believed to be the only really modular system in use in Sweden.

### MORE ADVICE

There are now nearly as many organisations and persons giving advice in the building industry as there are left to take it. Hardly a day passes without some constructional tycoon or new town big man issuing his own personal recipe for lowering building costs. From time to time, at the overall rate of several a month, new committees of high powered chaps are formed to integrate, clarify, and disseminate, the information and advice already available from existing committees of high-powered chaps which have spent months trying to integrate, clarify and . . .

The biggest and I suppose best of these committees was formed in 1954 by the N.F.B.T.E., under the chairmanship of its President, Mr. G. W. Grosvenor. The members are Sir Hugh Beaver, Sir Richard Coppock, Stephen Hudson, Norman Longley and J. W. Train. The Ministry of Works will be represented at the committee's meetings.

The service is available to all building undertakings

in the U.K. A fee is charged for services rendered. The Advisory Service describes itself as "the Building Industry's own organisation for advising Builders how to lower costs and increase productivity." The Advisory Service has its offices at the N.F.B.T.E., 82 New Cavendish Street, W.1.

### AND STILL MORE

The Wates Brothers are always worth listening to, partly I think because they give the impression that they practice what they preach. One instinctively believes what they say. Mr. R. W. Wates speaking in a M.O.W. discussion at the B.C. gave his programme for industry in the struggle to reduce building costs—(It seems to me that realists should now stop talking about reducing building costs and instead concentrate on preventing any further rise)—based on his company's experience in the last ten years.

1. Pre-planning—early association with architect and engineer.
2. The use of scale models for planning construction.
3. Overall planning by general foremen.
4. The need to bring operatives "into the picture".
5. The more active development of Work Study.
6. Improvement in costing.
7. The correct use of the improved plant now available.

It is interesting to note that the Advisory Service mentioned above is specifically designed to deal with all these points.

### CINEMAS IN THE NEWS

Mr. William Illingworth, J.P., F.R.I.B.A., a former Lord Mayor of Bradford and a well-known Yorkshire architect, died in Bradford last week at the age of 80. He formed the Bradford Branch of the Yorkshire Society of Architects and became its first chairman in 1936. His best known building is the Gaumont Cinema (previously the New Victoria) said to be the finest in the North of England.

Only a month before his death Mr. Illingworth attended the cinema's 25th birthday celebrations, and on that occasion the Lord Mayor of Bradford (Alderman R. C. Ruth) said that the architect's name would be "imperishably identified with this fine building".

I rather doubt whether any one will ever say the same about the first of the two new cinemas illustrated on this page. The second picture, a rough perspective, shows the Birmingham "Cinephone" by Mr. H. Werner Rosenthal, Dipl. Ing., A.R.I.B.A. This is a reconstruction job but everything in the sketch is new. This cinema is additionally interesting because it will specialise in continental films and is said to be the first major cinema in this country to do so.

### CONFERENCE CENTRE FOR THE HAGUE

I hear that the Municipality of The Hague is to build a great conference building on the lines of that at



The new Albany Cinema at Maghsell, Merseyside



Sketch of proposed Cinephone, Birmingham

Zurich. A competition has been ruled out as taking up too much time. I believe the building is to be designed by the town architect.

### LIGHTING FOR EATING

Good food can be quite spoiled by bad lighting. Indeed I believe that lighting is far more important in a dining room or restaurant than the furnishing of the place of its general ambience. One of the best meals I ever ate was when perched on a stool eating from the dish while my host sat on another stool and my hostess on the cooker. The ambience was odd but the lighting, part indirect, part direct was right on colour and intensity.

Candles seem to me to give the best quality of light, but often there are dark patches which make the technical side of eating difficult. The semi-indirect fitting on a rise and fall wire is fairly satisfactory provided that it gives a warm light and is not set so low that you cannot see your opposite number at the table. Another trouble is that if the surface of the table is dark diners' faces are in the shade and although in certain circumstances this is a good thing it can be disappointing.

The Scandinavian type of metal reflector, conical in shape and hung so as to light the table only, when used with a white table cloth is pleasant both at home and in restaurants.

Restaurant table lighting is difficult. Lamps on the tables look pretty in the main but get in the way and usually give indifferent light. A brightly lit restaurant is seldom successful. Recently I dined in a well-known restaurant in London where the table was floodlit by fittings recessed in the ceiling. This provided good illumination but gave all those at table, male and female, black Hitler moustaches. General lighting in a restaurant should be low and warm; just bright enough for the waiters to do their job. Tables should be pools of brighter light, sufficiently contrasted with the general lighting to give privacy to each group of people but not so contrasted that one feels spot lit in a well of darkness.

### ART IN THE COMMONS

Some time ago the M.O.W. formed a committee of M.P.s to report on the pictures and sculpture in the House of Commons. The report has now been published and shows that artistic junk has been accumulating there for many years. The Commons apparently have no funds for acquiring portraits of the famous and while a certain number of portraits already hanging are worth retaining the committee has listed 200 more which it would like to have. Oddly enough no one, Art Gallery, Museum or private owner has offered to lend very much. State galleries are, it appears, unable to help. The report asks for a fund of £10,000 to finance improvements and among its observations regrets the passing of the group portrait (with black and white key). In other places, notably the Royal Academy, the group portrait has recently reappeared and it is to be hoped that distinguished peers and politicians will follow the lead of artmasters and publishers.

### 1,000 YEARS OF PORTUGUESE ART

The latest in the great series of winter exhibitions for which we must be extremely grateful to the Royal Academy is quite wonderful, and not too large.

At my first visit I had no criticism for the way the 62 large photographs of architecture have been hung, on red and white alternating mounts against a background of naturalistic rubble wallpaper. Some splendid examples of Romanesque simplicity and Rococo exuberance have been collected.

Having read of the joy-ride in the great coach of some Academicians which almost induced seasickness, I set it swaying on its monumental strap-work suspension and can confirm their misgivings. Travellers then must have been either very hardy or very drunk.

I coveted a delicious painted wall-mirror; was repelled by the most prickly piece of furniture I have ever seen, and admired more than I can say the mastery

of Nuno Goncalves, which included such knowledge of his materials that his wonderful Polyptych panels are still in remarkably good condition.

If anyone thinks the Church is harsh today I recommend a close examination of a painting of the Inferno. Imagine believing in that!

### THE BUILDING EXHIBITION AND THE A.B.S.

Once again the organisers of the Building Exhibition have generously provided a free ticket for two with every copy of the R.I.B.A. Journal for October.

That is not all. The ticket also entitles both visitors to a free tea in the R.I.B.A. Clubroom. Even that is not all. For every ticket handed in at the exhibition the organisers will pay 3s. 6d. to the A.B.S.

If everyone who received a ticket presented it the A.B.S. would receive over £2,000. Make sure therefore that your ticket is not wasted—and don't forget the tea for two.

The last time I urged architects to subscribe to the A.B.S. I used harsh words about those who did not. A reader reproved me by saying that many subscribed through the charitable activities of Allied Societies and were therefore anonymous. This is perfectly true and such people are not among the many who still do not contribute in any form and therefore knows quite well that my remarks are not directed at them.

### PEARLS FROM MY SILK PURSE

"... 'the green belt'—the one piece of planning jargon which everybody understands."

Mr. Desmond Heap, in his Presidential Address to the T.P.I.

"I tried to put into this picture the quality which you meet in stone walls which is absolutely terrific."

Mr. Arthur Ballard, painter of an abstract picture which was hung upside down in the Walker Art Gallery.

"It is a hideous building (The Admiralty Citadel) but I doubt whether it can be improved by turning it into an old world tea garden."

The Rt. Hon. Nigel Birch, M.P.

ABNER

### Correspondence

Dear Sir,

Referring to Mr. James Kearsley's letter in the A. & B.N. of the 27th October, I was astonished to learn that Bacon is held responsible for a certain quotation. Whilst being very familiar with the suggestion that Shakespeare's works were written by Bacon this is the first I have heard that the mantle of Pope has also fallen upon him.

A little knowledge is dangerous; especially as the word in the original quotation is "learning" and not "knowledge".

Yours faithfully,

JOSEPH W. SMITH.

## Notes from Minutes of The R.I.B.A. Council Meeting held on 1st November

### Appointments

British Standards Institution: Conference to decide upon Preparation of a British Standard for Corrugated Translucent Sheets: R.I.B.A. Representative F. H. Heaven.

### Conference on Training in the Building Industry

Arising from the report of the Joint Committee on Architectural Education, arrangements have been made for a one-day Conference on Training to be held at the R.I.B.A. on the 31st January, 1956. Detailed arrangements have been left in the hands of the Joint Committee of Architects, Quantity Surveyors and Builders. The Chair will be taken by Mr. Harvey Frost, President of the N.F.B.T.E. The speakers will be Mr. D. H. McMorran, Mr. W. James, F.R.I.C.S., and Mr. David Woodbine-Parish for the N.F.B.T.E.

Invitations are being sent to a number of the principal organisations interested in the building industry to nominate representatives to attend the Conference.

### Amendment to Rules: The Berks., Bucks. and Oxon. Architectural Association.

Approval was given to an application by the Berks., Bucks. and Oxon. Architectural Association for an amendment to their Rule 5A dealing with the procedure for the nomination and election of Officers and Executive Committees of Branches.

### Proposed Standard Form of Tender for Nominated Suppliers

Approval was given to the draft of a proposed form of tender for nominated suppliers which is to be issued as a standard document. The form has already received the approval of the Royal Institution of Chartered Surveyors and the National Federation of Building Trades Employers.

At the R.I.B.A. Examination for the Office of Building Surveyor under Local Authorities held on the 12th, 13th and 14th October, 1955, six candidates presented themselves and the following were successful: William Finlay Kerr; Joseph M. B. Baffoe-Bonnie; Percival Leslie Teale.

### Housing Subsidies: N.F.B.T.E. Comment

Following the statement on housing subsidies made by Mr. Duncan Sandys, M.P., Minister of Housing and Local Government, in the House of Commons on October 27, the National Federation of Building Trades Employers issued the following comment:

The N.F.B.T.E., which represents both contract and private enterprise house-builders, welcomes the Minister's policy. Although it may mean some reduction in the over-all rate of housebuilding, it should result in an increase in the number of owner-occupied houses built without cost to public funds.

What that increase will be is difficult to estimate because of the "credit Squeeze" and the measures announced in Wednesday's Budget. These are bound, to some extent, to discourage would-be house-owners.

The Minister's policy is also welcomed because for too long too many families able to pay an economic rent have been assisted by subsidies at the expense of those who often are less well-to-do.

The Minister is right in his decision to review the Rent Restrictions Acts, under which, for many years now, private owners have subsidised their tenants, many of whom are better off than themselves, to the point of being unable to meet the cost of urgent repairs to their properties.

### I.C.I. Travelling Scholarship, 1955

The Imperial Chemical Industries travelling scholarship for a 5th Year student at the Architectural Association School of Architecture has been awarded to Miss Anna Tomlinson. The scholarship has a value of £250 and is to enable the recipient to undertake study and research abroad in connection with the decoration of buildings.

### PARTNERSHIP

Edward D. Mills, F.R.I.B.A., has pleasure in announcing that he has taken into partnership F. A. Turner, A.R.I.B.A., and G. C. Bodgener, A.R.I.B.A.

The practice will be continued at 15 Carlisle Street, Soho Square, W.1, as Edward D. Mills and Partners.

### CHANGE OF ADDRESS

Max Lock & Partners, F./A.A.R.I.B.A., M./A.M.T.P.L., Architects and Town Planning Consultants, have moved their London Offices from 7 Victoria Square, S.W.1 (VIC 7071), and are now at 109 Gt. Russell Street, W.C.1. (MUS 2193/4).

### COMING EVENTS

#### Modular Society

November 15 at 7 p.m. Paper on "Modular Coordination—an Industrial Tool," by Lennart Bergvall, architect SAR., Chairman of the Swedish Commission on Modular Coordination. At the R.I.B.A.

#### The Royal Institute of Chartered Surveyors

November 15 at 7 p.m. Chartered Quantity Surveyors' Annual Dinner will be held at Grosvenor House,

Park Lane, W.1. The principal guest and speaker will be The Rt. Hon. Nigel Birch, M.P., Minister of Works.

#### Society of Chemical Industry

November 17 at 6 p.m. "Organic Matter in Soil in Relation to Soil-Cement Stabilisation," by K. E. Clare and P. T. Sherwood, Road Research Laboratory, D.S.I.R., at the Lecture Hall, The Junior Institution of Engineers, Pepys House, 14 Rochester Row, S.W.1.

#### The Architectural Association

November 16 at 10 a.m. Symposium on "The Problem of Vehicles in Parking Areas." Chairman, Richard Sheppard, F.R.I.B.A. At 34 Bedford Square, W.C.1.

#### The Reinforced Concrete Association

November 16 at 6 p.m. Paper on "The Place of Cement in Concrete Making," by E. S. Shellard, at 11 Upper Belgrave Street, S.W.1.

#### Victoria and Albert Museum

November 16 at 6.15 p.m. "Bavarian Castles," by Prince Franz Seyn-Wittgenstein, Bavarian Department of Ancient Monuments, at South Kensington, S.W.7.

#### The Institution of Public Health Engineers

November 17 at 6 p.m. Paper on "The Quality of Rainfall Run-off Water from a Housing Estate," by R. Wilkinson, M.Sc., Ph.D., A.R.I.C.S. Water Pollution Research Laboratory, D.S.I.R., at Caxton Hall, Westminster, S.W.1.

#### The Royal Society of Health

November 16 at 11 a.m. London Sessional Meeting on "The Design of Health Buildings." Papers on "The Hospital and Its Out-Patient Department," by Dr. C. W. Gordon T.D., Deputy Senior Administrative Officer, Birmingham Regional Hospital Board, and "The Clinic Requirements of Local Authorities and the Functions of Such Clinics," by Dr. A. B. Stewart, Deputy M.O.H., London C.C. At 2 p.m. Papers on "The Design of Clinics in Great Britain and of Continental Out-Patient Departments," by Donald A. Goldfinch, E.R.D., Dip.T.P., F.R.I.B.A., Architect, Birmingham Regional Hospital Board, and "The Design of Out-Patient Departments in Great Britain," by Alan H. Devereux, B.A. (Arch.), F.R.I.B.A. At 90 Buckingham Palace Road, S.W.1.

#### Exhibition

November 10-18. Weekdays 9.30 a.m.-4.30 p.m. Exhibition of Furniture Design, organised by the Society of Student Architects, at The School of Architecture, The Polytechnic, Regents Street, W.1.

## L.C.C. Nominated Contractor Experiment

HOUSING DEVELOPMENT, PICTON STREET, LAMBETH

Architects mainly responsible for scheme:

Dr. J. L. MARTIN, Architect to the Council. WHITFIELD LEWIS, Principal Housing Architect

MICHAEL POWELL, Assistant Housing Architect. A. W. CLEEVE BARR, Senior Architect-in-Charge of Development

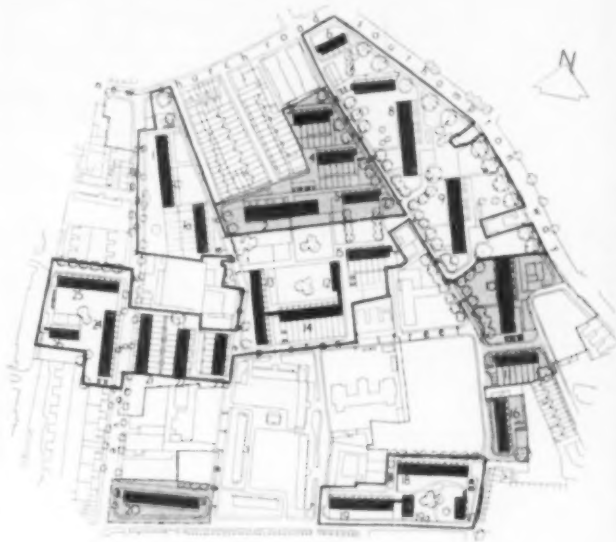
H. G. GILLET, Architect-in-Charge

E. J. F. CLARKE, P. De SAULES, T. O'TOOLE, Assistant Architects

UNDER the normal method of competitive tendering the architect plays little part in deciding erection techniques to be used on site, since this is the responsibility of the contractors. As a consequence the architect, if he does not know which techniques will be used, is unable to adapt his design ideas to take maximum economic (or even aesthetic) advantage. Similarly, the normal method of tendering does not allow the contractor to play any part in design details, since he is not brought into the picture until all the drawings are complete and the bills of quantities prepared.

If the full possibilities of new constructional techniques are to be exploited, it is essential that a contractual system should be adopted which will allow for the building to be designed in terms of those techniques from its inception. The L.C.C. had proved to themselves that attempts to convert a block of flats designed for "traditional" construction to any other system could never produce more than an unsatisfactory compromise.

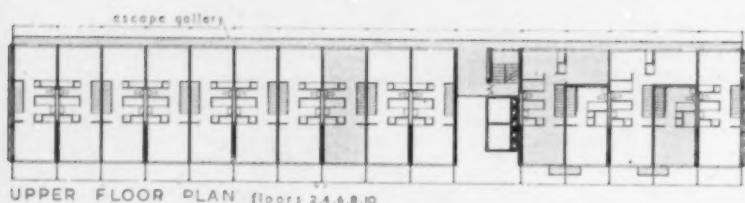
Below, private balcony side of four-storey block. Timber framed panels with Asbestolux covering



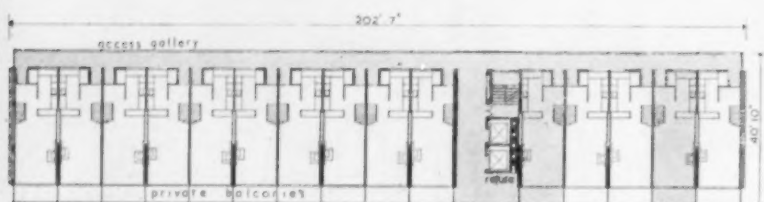
Block Plan. Phase I tinted; phase II outlined in black. 11 Storey: blocks 2, 8, 9, 10. 4-Storey: blocks 1, 1a, 3-5, 7, 11, 13-16, 18-20, 24, 25. 3-Storey: blocks 12, 17, 19a, 26. 2-Storey: blocks 21-23.



## Nominated Contractor Experiment Picton Street

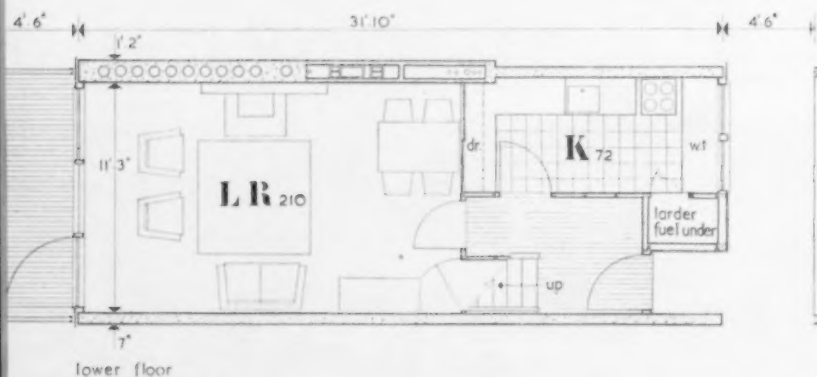


UPPER FLOOR PLAN floors 2, 4, 6, 8, 10

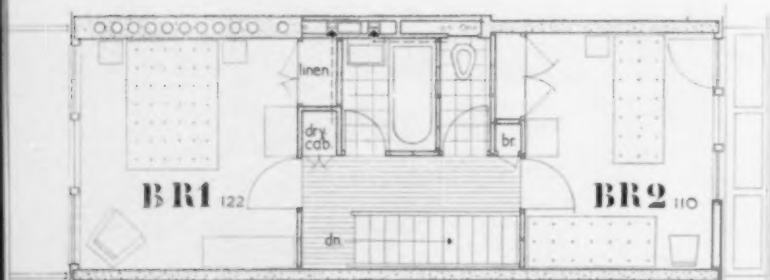


LOWER FLOOR PLAN floors 1, 3, 5, 7, 9

Floor plans. 11-Storey maisonnette block



lower floor



upper floor

Maisonnette plans

If a new system was to be employed, however, some contractual arrangement would be needed which would enable the building contractor to be nominated at a very early stage. An arrangement was worked out and considered by the Council in 1953 and approved for application as an experiment to the housing scheme for a site at Picton Street, Camberwell.

### Picton Street Scheme

The housing site at Picton Street has an area of 17.9 acres and was acquired mainly under Part III of the Housing Act, 1936, as a "clearance area", being at that time largely occupied by unfit and dilapidated houses.

The scheme provides for the construction of 682 dwellings: 320 in four 11-storey maisonnette blocks, 295 in 16 4-storey maisonnettes, 42 in 3-storey balcony access flats and the remainder (25) in terrace houses. This gives a total density of 38 dwellings to the acre. There will also be a small number of shops, a club room, minor ancillary buildings and children's play spaces.

The constructional works which began in January, 1955, have been divided into two phases. Phase I, now in progress, comprises 250 dwellings and Phase II 432 dwellings. The first 11-storey block of maisonnettes and three 4-storey blocks are now well under way.

### Contract Arrangements

As mentioned above, normal competitive tendering was dispensed with and the building contractor, John Laing and Son, Ltd., was nominated at the design stage—some 14 months before the commencement of work on site. The nomination was made after a number of firms had been interviewed and their organisations considered in relation to their suitability for the work.

An estimate of the cost of the scheme—approximately £1,700,000—was prepared by the Council's quantity surveyors on the basis of the known costs of comparable accommodation in current contracts which had been let after normal competitive tendering. This estimate was adopted as the target estimate for the work and became the "target price", i.e., the maximum amount which the Council can be required to pay, subject to adjustment for certain defined variations such as wage rates and materials.

The contractor was given and availed himself of the opportunity of checking this estimate at an early stage so as to satisfy himself that it was reasonable.

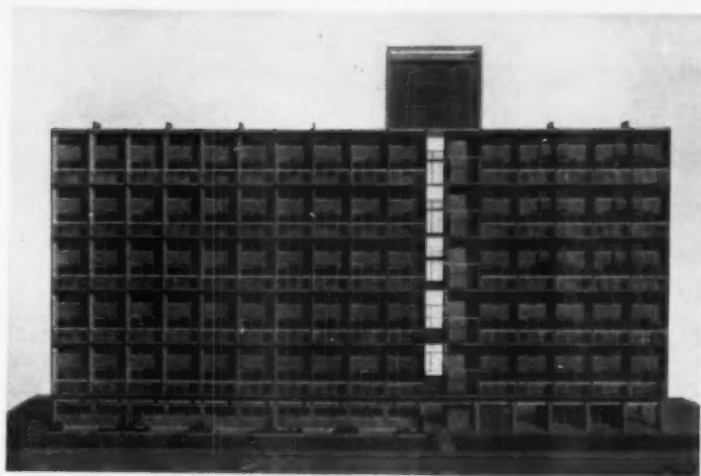
On completion of the design stage, bills of quantities were prepared for Phase I and priced independently by the Council and by the contractor. At this point the contractor was given the option of withdrawing if he considered the "target price" was inadequate. The scheme, moreover, having been divided into two phases, a break clause was included in the contract documents to allow the contractor the opportunity of withdrawing from Phase II if, for instance, he came to the conclusion that the actual cost of Phase I would exceed the "target price". Agreement to continue with Phase II has in fact now been reached between the Council and John Laing and Son, Ltd., and this firm will therefore continue with the whole scheme.

Payment is made to the contractor on the basis of actual costs, plus a fixed percentage for overheads and profits. Any excess of actual cost over and above the target estimate will be borne entirely by the contractor. Any savings which can be achieved by keeping actual cost below the target figure will be shared between the contractor and the Council. Both parties therefore have a strong incentive to keep actual costs as low as possible. The procedure for variations, the definitions of "target price", "prime cost", "overheads", etc., are defined in the form of contract, which is an extensive document.

#### Design Team

In addition to the architect, quantity surveyor and contractor members, the design team included representatives of the consulting engineers, Messrs. Ove Arup and Partners and of the Building Research Station (Department of Scientific and Industrial Research).

In this instance the results of co-operation between the contractor, and the designers have been fruitful. For example, the decision at an early stage to use a tower crane of known size and capacity for the erection of the 11-storey blocks enabled this design to proceed on the basis of large prefabricated components, suitable for economic handling by this crane. Again, as a result of joint discussion, an early decision to attain as much speed as possible in erection time by



Model. 11-Storey block

reducing to a minimum such wet trades as plastering, *in situ* concrete (in horizontal members) and brickwork, fundamentally affected the design of walls, partitions and floors. Another (unexpected) outcome of the team's work was the making use of the incidental possession by the contractor of a large quantity of used steel shuttering, this enabling the structural walls of the 4-storey blocks to be made more economically in low grade concrete than in 9in brickwork.

#### Construction

##### 11-STOREY BLOCKS

Reinforced concrete strip foundations. *In situ* 7in thick unreinforced concrete crosswalls, alternating with 14in reinforced concrete walls, containing ducts and flues. (Concrete strength 3,000 lb/sq in after 28 days.) Precast r.c. main floors and timber prefabricated intermediate floors, the latter fixed to precast r.c. beams. Prefabricated timber-framed external panel walls and internal partitions—the walls being faced externally with teak boarding, the partitions with plasterboard. The public staircase has *in situ* landings and precast r.c. stair flights. The balconies, on both long elevations, consist of wired glass in aluminium frames, bolted between extruded aluminium verticals with

sheet aluminium screens between private balconies.

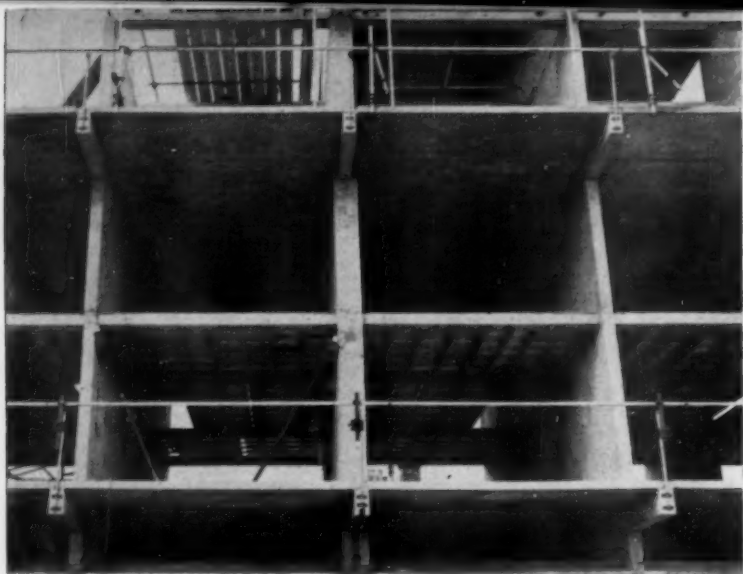
Heating is by individual openable slow combustion stoves, with individual flues—precast flue linings being cast into structural walls. Plumbing is based on modified "single-stack" principles, with vents to W.C. fittings only. The soil stacks and waste branches are in copper with a new kind of "push fit" spigot and socket joint using a neoprene ring. Electric wiring within maisonnettes is in TRS cable within the timber floor and timber partition and under the timber boarding to the main floor but is in conduit in walls and solid partitions. Mechanical extract ventilation (with a duplicate set of motors and fans situated in the roof motorhouse) is provided for internal bathrooms and W.C.s. A second system, on similar lines, is provided for the individual gas-heated drying cabinets within each flat.

##### 4-STOREY BLOCKS

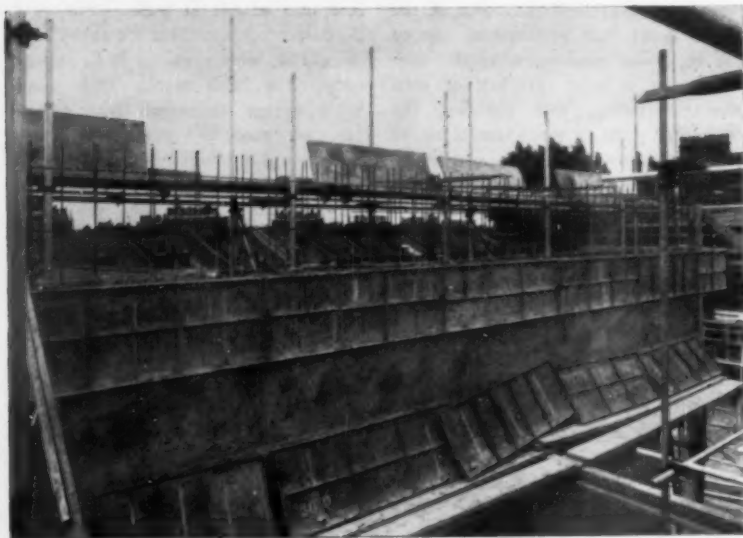
Unreinforced 7in thick concrete cross-walls (2,250 lb/sq in after 28 days) with brick rubble aggregate mass concrete foundations and chimney stacks. *In situ* concrete main floors and prefabricated timber intermediate floors. Cladding and partitions similar to the 11-storey block

Model. 4-Storey block





Completed structure of a double unit. The timber floor sections are lifted by crane and are light enough to be manhandled into position. The chase in the centre cantilever at first floor level is for a R.W.P.



Four 2ft 0in lifts are poured to gable walls. Together with the public staircases they provide lateral rigidity to the block and are normally reinforced as seen here

Floor slabs are mechanically tamped (right) and vacuum treated (left)



## Nominated Contractor Experiment, Picton St.

except that the panels walls, being on sheer faces of the building, are required to have an incombustible finish and are therefore faced with sheet aluminium, over asbestolux, instead of hardwood boarding.

### Design Stage Investigations

During the design stage cost investigations of alternative designs were made for most components of the buildings, both 4- and 11-storey. These cost estimates were prepared independently by the quantity surveyor member of the architect's team, by the contractor's staff and by the Building Research Station surveyors and the results subsequently compared. The structural engineers prepared alternative designs for the structure with column and beam frames, with frames combined with walls and with both at varying spacings. A highly original scheme was also prepared by the engineers for precasting the concrete walls in the form of staggered 2-storey-height units which would interlock with the precast floors. These schemes were discussed with the contractor's plant specialists and production engineers in relation to the use of large cranes and alternatively of light cranes rising with the building.

A number of different designs were also prepared for the floors—in precast concrete, *in situ* concrete, timber with and without beams, etc. The possibility of precasting floor slabs to give an adequate finish on the underside so that the ceilings can be decorated direct, omitting plaster, was considered, as was the suggestion to decorate the *in situ* concrete direct with a skim coat of self-coloured "plaster" and experiments in this were made at the "mock-up". Taking all factors into account the system of construction now in use is estimated to be cheaper than the most economical column and beam system. Omission of reinforcement in the alternate walls (which has been allowed experimentally under Part IV of the Building Act) is a further economy. Again, savings have been made by quality control of concrete and by the design of mixes according to the strengths



*The hardwood faced cladding panels which are bay width (11ft 3in) and storey height (circa 8ft 9in) are prefabricated off site*

actually found to be achieved in tests, rather than in accordance with the Standard By-law mixes.

A variety of materials was considered for the design of the light-weight external wall panels, the cost target for which was taken as the traditional brick-cavity clinker panel wall, including the cost of supporting beams and an allowance for increase in cube (area of roof and foundations) which such thicker walls would require. Considerable work was done, with the co-operation of certain manufacturers, in the development of

matt-finished, vitreous enamel panels suitable for external cladding. While there was little doubt that these panels could be developed to satisfy both architectural and maintenance standards, the work was abandoned on account of costs. A feature of the panels in both the 4 and 11-storey blocks (with certain limited exceptions) is that the facing material covers the softwood framing members (unlike previous panels used by the Architect's Department Housing Division in which a sheet facing has been fixed into a frame with glazing beads)

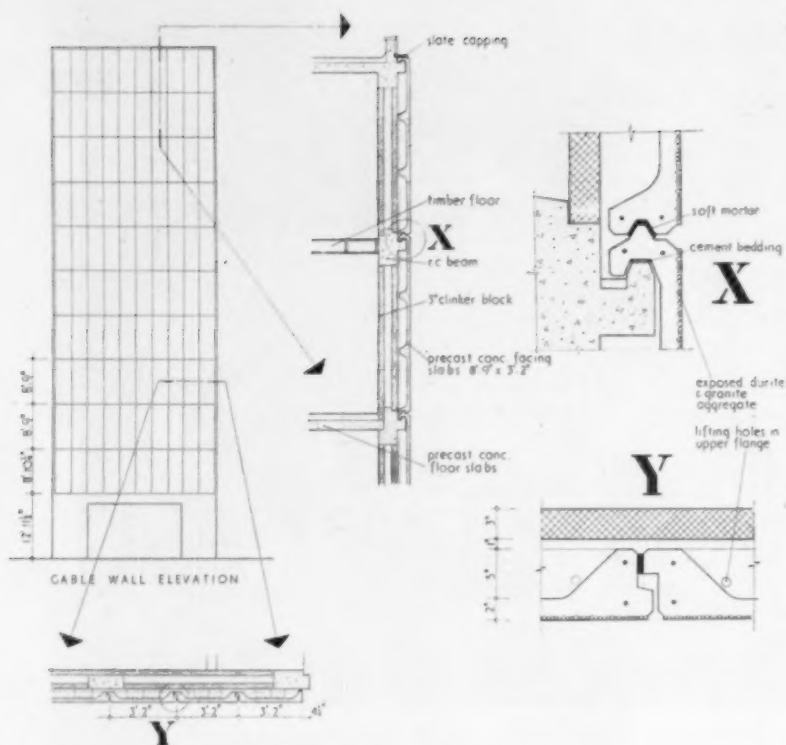
so avoiding maintenance or painting of the frames.

The plumbing was considered in terms of copper, cast-iron and galvanised steel and quotations for comparable systems in these materials were obtained. The connections to the soil stacks in the 11-storey blocks which serve maisonnettes, back-to-back, are of greater complexity than in the 4-storey blocks and this was found economically to favour a prefabricated copper system for the former and a cast-iron system for the latter.

*Timber floors within the dwellings are prefabricated in panels in a site workshop—*

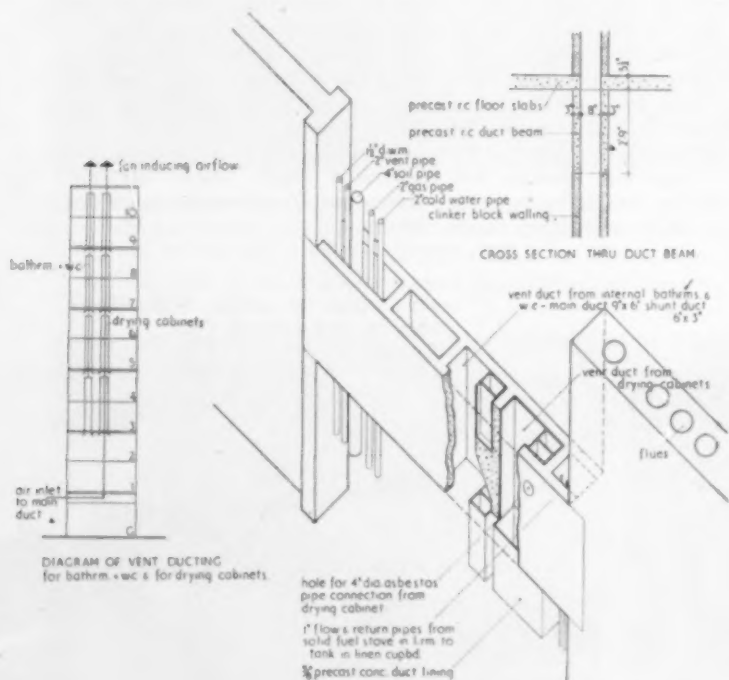
*—and stacked for curing. Note rebated edge for joint between slabs*





Precast concrete cladding on gable and walls

Axonometric detail of duct beam



## Nominated Contractor Experiment Picton Street

For sound insulation purposes the floor finish to the main concrete floors separating maisonnettes is "floated" on an insulating rock or grass wool quilt. Given this quilting it was found that tongued and grooved boarding, on timber battens, was slightly cheaper than thermoplastic tiles on screed. As the former is a little better from the point of view of sound reduction and speedier to lay it was adopted except in kitchens and bathrooms, etc.

The roof finish consists of three-layer bitumen felt, with white stone chippings laid over three inches of lightweight screed (35lb per foot cube). Expansion joints are provided in the 11-storey blocks at three points only and are formed by dividing the top three feet of the cross walls into two leaves separated by  $\frac{1}{2}$ in thickness of fibreboard.

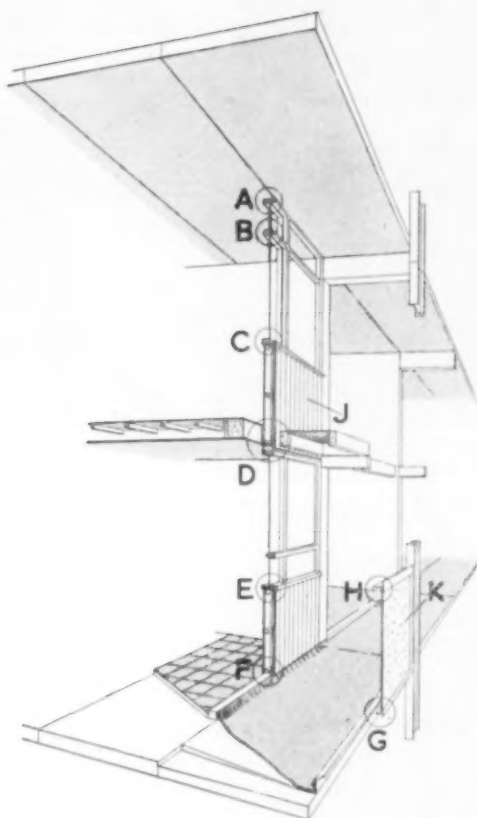
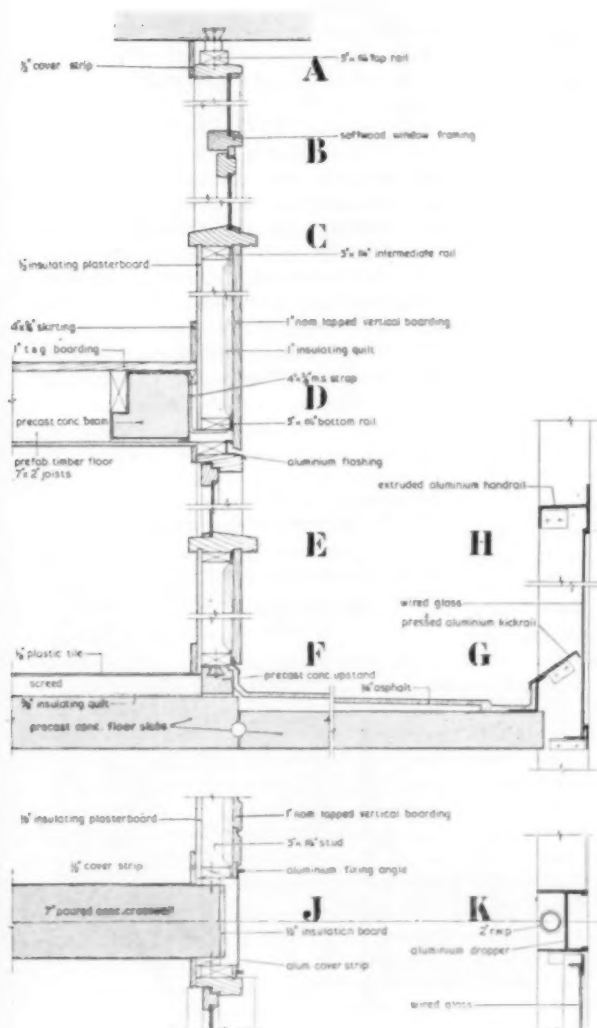
Wired glass was used for balustrade panels as the cheapest available and architecturally acceptable finish. The framing in the 11-storey blocks is in aluminium to reduce weight at the ends of cantilevers and also to reduce maintenance costs. Alternative quotations were also obtained for the main structural members in galvanised steel, but this proved to be more expensive. In the 4-storey blocks the timber-framed panels to the external walls of the lower maisonnettes carry through to form the framing for the balconies above. The gable end walls in the 11-storey blocks were also the subject of alternative designs. They are not in solid concrete, since experience has shown that such walls, used externally, frequently give rise to trouble due to thermal movement and to difficulties in satisfactory weather-proofing the joints of facing slabs. These walls consist of column and beam frames with an internal lining of insulating blocks, a cavity and an external cladding of storey height, exposed aggregate, precast concrete slabs.

It may be said that methods or materials investigated in the search

for economy will vary as prices and availability vary. This is undoubtedly true but while the constructional components and methods used for the Picton Street buildings may not slavishly be copied nevertheless it is equally true that valuable lessons of general application have emerged.

Perhaps the best way of attempting to assess the contractor's contribution at this stage, is to attempt to answer the question—what difference would there have been in the designs if the contractor had not been a member of the team? The answer is that in regard to the final finished appearance of the buildings, particularly external

Continued overleaf



### 11-Storey maisonnette block details

#### Acknowledgements:

Other members of the Architect's Department chiefly concerned are the Principal Quantity Surveyor M. F. Rice, assisted by R. V. Wiseman and I. Carter and A. H. Withers, Finance Officer, assisted by C. C. Chandler.

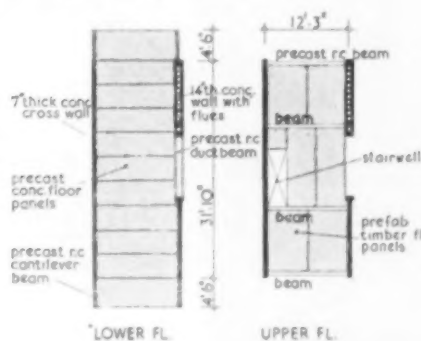
Mention should also be made of J. Croft, formerly Chief Inspector, and J. Clancey, his successor, of the Public Health Department.

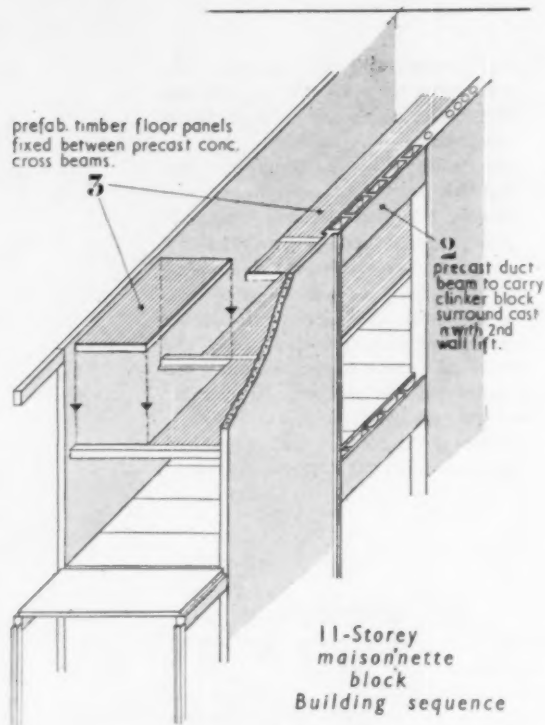
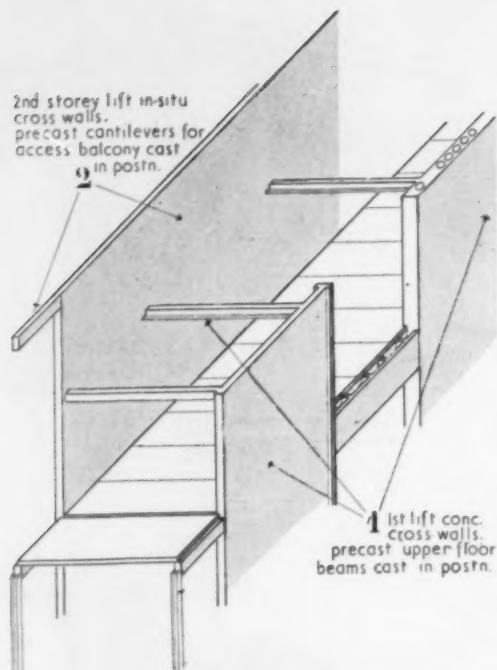
Dr. Weston, R. F. Broughton and W. Allen of the Building Research Station, are also closely associated with the scheme.

The appointed quantity surveyors are Messrs. L. A. Francis. The consulting structural engineers, as already mentioned, are Messrs. Ove Arup and Partners.

The Research and Development Department of John Laing and Son, Ltd., the nominated contractor, has been concerned with the project from its design stages.

### Layout of floor panels



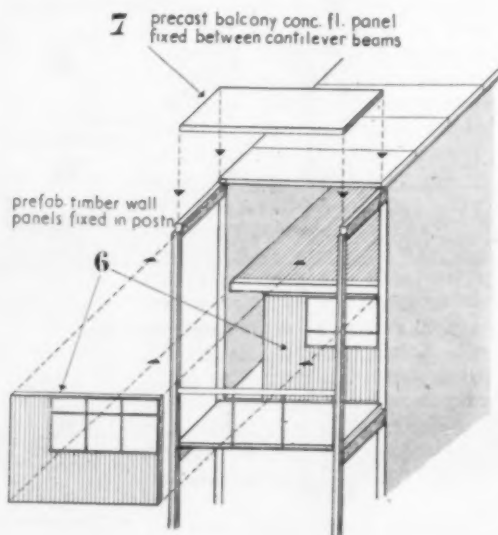
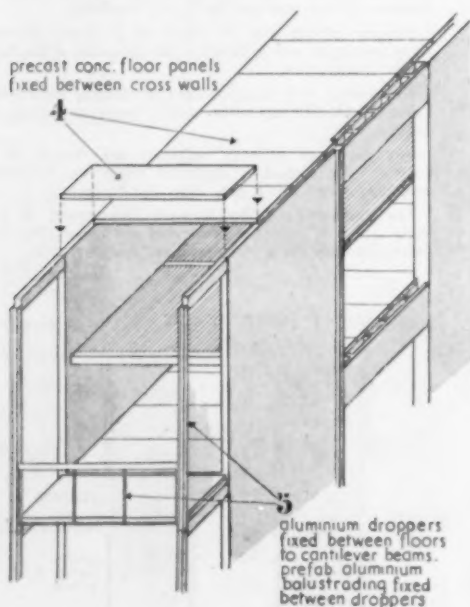


#### The Contractor's Contribution

ally, there would have been probably very little difference. Assuming that the architect, engineer and quantity surveyor could have worked together, and even without the contractor's help could have done a similar amount of "cost planning" at the design stage, with probably a good deal more consultation with specialist sub-con-

tractors, the decisions concerning facing materials, and architectural expression of the various elements of the building would still have been the same, or very nearly so. The particular value in having the contractor in at the design stage was in removing uncertainty as to whether or not a particular way of doing certain things

was in fact going to be more economical than another. This consideration basically affects the working drawings to be produced, the speed of erection and, of course, the ultimate cost—but it affected the ultimate appearance of the work only to a minor degree. It did make it possible for the architects and engineers to



achieve what they wanted to achieve without fear that what they were doing for aesthetic as well as constructional effect might be uneconomic. For example, prefabricating the timber floors and making them in panels of a certain size so that they could be supported on precast cross-beams concealed within the thickness of the floors. Without participation by the contractor at the design stage these floors would not have been prefabricated or of such light weight, and the beams might well have shown, as usual, in the rooms.

In regard to the 11-storey blocks the architects and engineers would not have dared to specify precast concrete components, some of them of quite complicated shapes, to the extent which they have done if the contractor had not been a member of the design team. The contractor's decision to set up a precasting works on site, using the vacuum process for rapid curving of the units was a basic factor in the decision to precast both the floors in 12' x 3' 6" x 5" units, and the large and complex twin beams containing the junctions between branch and main ducts and the points of entry for the branches. This decision similarly influenced the detailing of the precast cantilevers carrying the balconies, the beams supporting the timber floors, the gable end slabs and the precast beams with ribs on which to carry them, the pierced and louvred slabs which form the external wall to the public stairs and the precast staircase flights and landings themselves. If the contract had been a normal one, subject to competitive tender between 10 to 20 contractors, the great bulk of this work would have been specified and detailed as *in situ*, because experience shows that in general lower prices can be obtained in that way.

Again a basic decision, which could not have been made without the collaboration of the contractor, was to try and eliminate wet plastering within the maisonnettes by producing a good enough finish on the concrete walls and ceilings for decorating direct. Experiments in this connection were made at the design stage on a mock-up of a typical maisonnette constructed in the contractor's yard. That stage of finishing has not yet been reached on the job and final assessment of the success or otherwise of these experiments will not be avail-

able for some months. In this form of contract there is a strong incentive to both parties to persist in pushing experiments of this kind to a successful conclusion.

The detailing of the prefabricated timber floors and of the external timber-framed cladding panels was also a matter in which the contractor had a contribution to make at the design stage. His contribution has however continued because he has an incentive to improve such details as the job proceeds. For example the timber floors were originally designed, each divided into seven sections. In practice it has been found difficult to bolt these together so that the top and undersides are level and the contractor has taken the initiative in suggesting that the floors be redesigned in three larger sections only.

In the design of the 4-storey maisonnette blocks the architects, as a result of analyses of other jobs, had established that 9in fletton brick cross-walls were considerably cheaper than 7in concrete walls or a column and beam frame with clinker block infilling to serve the same purpose. As a result of the contractor's having quite incidentally a quantity of used steel shuttering which could be available at a low rate, it was suggested that the possibility of 7in mass concrete walls might be re-examined. This was done and the concrete walls offered an economy over brick (particularly when the case of cantilevering from them was taken into account) and a design decision was taken.

A fundamental decision in regard to all the concrete work was not to work to by-law mixes, but to design strengths as revealed by tests from cubes taken on site. This required a degree of supervision and control of concrete work, not normal in housing contracts, and which could not have been adopted without the full collaboration of the contractor. The result produced of course a considerable saving in cement. Following this basic proposal of the consultant engineer the contractors made a suggestion for a further economy in the mass concrete strip foundations and flue stacks of the 4-storey blocks. The foundations of these blocks receive comparatively low stresses, and subject to regular and frequent testing of the materials, the use of "blitz rubble brick" aggregate was adopted and proved successful.

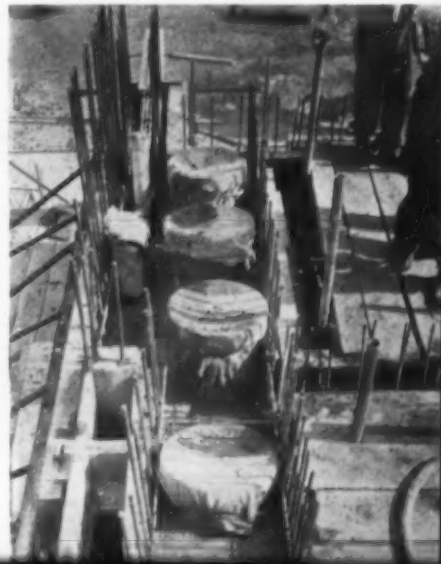


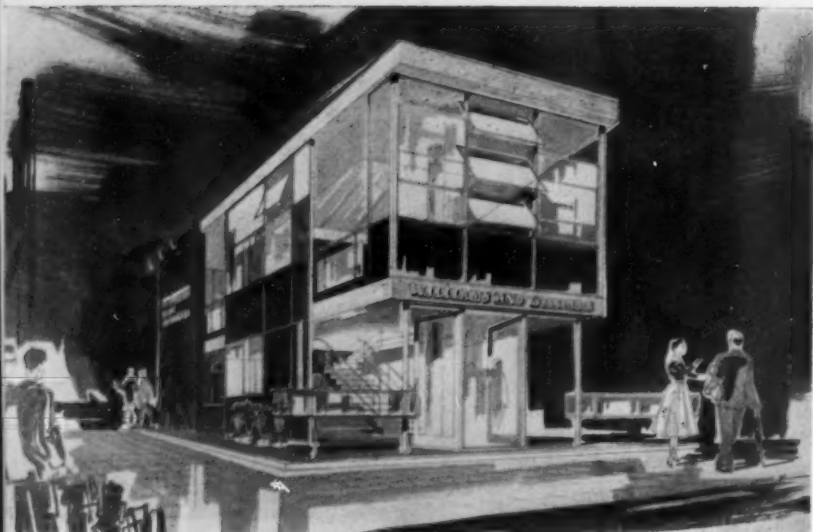
Precast (on site) concrete cantilever brackets for access galleries and private balconies



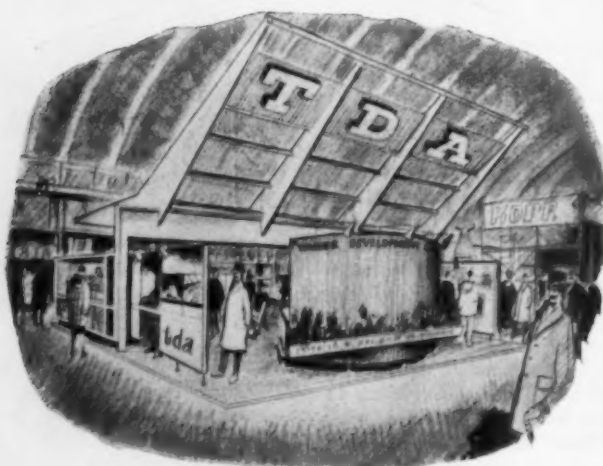
The walls are poured 8ft 0in lifts, and the concrete is vibrated

Refuse chutes and vent pipe





Designers: Yorke, Rosenberg & Mardall



Designers: Alan Roscoe-Hudson  
& Alistaire G. Smith

Designers: Beck & Pollitzer Ltd.



## OLYMPIA 1955

The President of the L.M.B.A. and Mrs. Holloway are to be "At Home" to members in the L.M.B.A. Club Room on the afternoon of the opening day, Wednesday, November 16th.

Area days are as follows:

November 16th: South Eastern Area; 17th: Central Area No. 1; 18th: North Eastern Area; 21st: Southern Area; 22nd Central Area No. 5; 23rd: Central Area No. 2; 24th: North-Western Area; 25th: Northern Area; 28th: South Western Area; 29th: Central Area No. 3; 30th: Central Area No. 4.

### EXHIBITION DIARY: NOV. 16-30

Nov. 16	2.30 London Building and Engineering Contractors Accident Prevention Group.	Large Conference Room
	2.30 Joinery Managers' Association	Empire Restaurant
Nov. 17	All day Southern Counties Federation of Building Trades Employers	Large Conference Room
	4.30 Essex, Cambridge and Herts. Soc. of Architects	Pillar Hall
Nov. 18	3.00 Tretol, Ltd., Lecture	Large Conference Room
Nov. 19	2.00 Plasterers' Craft Guild A.G.M.	Small Conference Room
	2.00 Institute of Municipal Building Management. A.G.M.	Large Conference Room
Nov. 21	2.30 South Eastern Brick and Tile Federation	Small Conference Room
	4.30 Colt Ventilation Ltd. Lecture and Film.	Large Conference Room
Nov. 22	12.45 Architects' Benevolent Society Luncheon	Empire Restaurant
	Nat. Fed. Building Trades Employers. Reception.	Pillar Hall
Nov. 22	5.30 M.o.W. Discussion on Building Maintenance*	Large Conference Hall
	4.30 Faculty of Architects & Surveyors	Addison Restaurant
Nov. 23	10.00 British Cast Concrete Federation. Meeting.	Small Conference Room
	4.30 Colt Ventilation Ltd. Lecture and Film.	Large Conference Room
Nov. 24	All day British Ceramic Society	Large Conference Room
Nov. 25	3.00 Tretol Ltd. Lecture	Large Conference Room
Nov. 26	2.00 Guild of Bricklayers. A.G.M.	Large Conference Room
	2.30 Institute of Certified Carpenters.	Small Conference Room
Nov. 28	Worshipful Company of Tilers and Bricklayers Luncheon.	Empire Restaurant
Nov. 29	10.00 National Federation of Clay Industries.	Large Conference Room
	4.30 Colt Ventilation Ltd. Lecture and Film.	Large Conference Room
Nov. 30	Exhibition closes.	

\* In the Chair: Sir T. P. Bennett, F.R.I.B.A. Discussion: T. W. Jackson, Director of Maintenance Services, M.o.W.; A. W. C. Barr, A.R.I.B.A., Chief Development Officer, L.C.C.; A. W. Yeomans, M.I.O.B.; A. H. Edmonds, A.R.I.B.A., Head, Maintenance Division, Architect's Dept., L.C.C.

## Alphabetical List of Exhibitors

This alphabetical list with stand references relates to the plans of the exhibition shown on pages 594, 595 and 596. The stand number is followed by the row letter and the initial of the hall in which the stand may be found, the suffix G indicates that the stand is in the gallery, e.g., 63 G/G is Stand No. 63, row G, Grand Hall; 406 /GG, Stand No. 406, Grand Hall Gallery. /N—National Hall, /NG—National Hall Gallery, /E—Empire Hall and /EG—Empire Hall Gallery. P.A.—Portcullis Avenue. H.A.—Hospital Avenue.

### A

A. B. C. D. (Raynes Park) Ltd.—274, 275  
N N  
A. B. Mould & Construction Co. Ltd. 220  
K G  
Accrington Brick & Tile Co. Ltd.—58 C/G  
A. C. E. Machinery Ltd.—285, 286 O N  
Acme Flooring Co. (1904) Ltd.—418, 420  
GG  
Acrow (Engineers) Ltd.—107, 108 E/G,  
426 GG, 506 NG  
Adam & Harvey (Rapid Hammer) Ltd. 656,  
657 EG  
Adamite Company Ltd.—565 NG  
Adametz Ltd.—180 H G, 205 J G  
Aero Research Ltd.—602 EG  
Aga Heat Ltd.—5, 6 A G  
Aga Trading Co. Ltd.—605 EG  
Aidas Electric Ltd.—79 D G  
Airscrew Company & Jicwood Ltd.—468,  
470, 472 GG  
Ajax Architectural Products Ltd. 622 EG  
Alabastine Co. Ltd.—156 G G  
Allam, E. P. & Co. Ltd.—325 R N  
Douglas, Allen, Ltd.—609 EG  
Allied Ironfounders Ltd.—9 A G, 658, 659  
EG  
D. Anderson & Son Ltd.—129 F/G  
ARCHITECT & BUILDING NEWS—145  
G G  
Architects' Benevolent Society—406 GG  
Architects Classifile—252 L G  
Architectural Press Ltd.—355 T N  
Armstrong Cork Co. Ltd.—46 C/G  
Ascot Gas Water Heaters Ltd.—272 N N  
Ashdowns Ltd.—488, 490 GG  
Associated Brassfounders Birmingham Ltd.  
—533 NG  
Atlas Diesel Co. Ltd.—390 Y E  
Austins of East Ham Ltd.—484, 486 GG  
Austin & Trimmingham—457 GG  
Aveling-Barford Ltd.—71, 72 D/G  
Avery, J., & Co. (Est. 1834) Ltd.—436 GG

### B

Bachrick Patents Ltd.—278 N N  
Bamford, J. C. 255, 256 L G  
Banks, W. P. Ltd.—429a GG  
B.B. Chemical Co. Ltd.—631 EG  
Bell, A., & Co.—29 B/G  
Bellrock Gypsum Industries Ltd.—229 K/G  
Benford Ltd.—73, 74 D/G  
Benn Brothers Ltd.—7 A G  
Bennett, S. & Son (Wood Flooring) Ltd.—  
461, 463 GG  
Benton, Edward, & Co. Ltd.—408 GG  
Berensford, James, & Sons Ltd.—303 Q N  
Berend & Berend Ltd.—359 PA  
Berger, Lewis (Gt. Britain) Ltd.—311 Q N  
Berite Ltd.—413 GG  
Berry Wiggins Ltd.—1 A G  
Binns, A. J., Ltd.—303 Q N  
Black & Decker Ltd.—491 GG  
Blundell, Spence & Co. Ltd.—339, 340 S N  
Bolton Gate Co. Ltd.—184 H G, 201 J/G  
"Books & Careers"—513 NG  
Boulton & Paul Ltd.—314, 315 Q N  
Bourchardt, F. A.—567 NG  
Bourner, F. H., & Co. (Engineers) Ltd.—  
548, 550 NG  
Braby, Fredk., & Co. Ltd.—185 H G,  
200 J G

Brandram Bros. & Co. Ltd.—440 /GG  
Bray, W. E., & Co. Ltd.—65 C/G  
Brecomin—510b NG  
Brentford Electric Ltd.—344 S N  
Bridges, S. N., & Co. Ltd. 316, 317 Q N  
Briggs, Wm., & Sons Ltd.—32, 33 B/G  
British Aluminium Co. Ltd.—273 N N  
British Building & Engineering Appliances  
Ltd.—164, 165 G/G  
British Columbia—518, 520, 522, 524 NG  
British Electrical Development Ass'n—103,  
104 E G  
British Equipment Co. Ltd.—175 H G,  
210 J G  
British Gates Ltd.—509, 511 NG  
British Hoist & Crane Co. Ltd.—110 E/G  
British Lead Mills Ltd.—504 NG  
British Plaster Board (Mfg.) Ltd.—94 E G,  
626, 627 EG, 650 EG  
British Plimber Ltd.—178 H G, 207 J/G  
British Railways—396 Z/E  
British Rubber Development Board—34  
B G  
British Standards Institution—10 A G  
Briton Brush Co. Ltd.—353 T N  
Brockhouse, J., & Co.—624, 625 EG  
Brookman, R. S., Ltd.—388 Y E  
Brush Group Ltd.—312, 313 Q N  
Bryce White & Co. Ltd.—93 E/G  
B.S.A. Motor Cycles Ltd.—431 GG  
Builder, The, Ltd.—141 G/G  
Building Industry & Scottish Architect—  
234 K G  
Building Industry Distributors Ltd.—570,  
571 NG  
Burgess Products Co. Ltd.—508 NG  
Burtain Ltd.—15 A G  
Byrd, A. A., & Co. Ltd.—349 T N

### C

Cafferata & Co. Ltd.—38 B G  
Calders Ltd.—239 L G  
Callow & Keppich Ltd.—37 B/G  
Canadian Government Exhibition Com-  
mission—534, 535 NG  
Candy & Co. Ltd.—137 B F/G  
Cantie Switches Ltd.—467 GG  
Cape Asbestos Co. Ltd.—42 C G  
Carter Group of Companies—85 D G  
Cascellod Ltd.—540 NG  
Caxton Publishing Co.—3 A G  
Cayless Bros. (Battersea) Ltd.—17, 18 B/G  
Celcon Ltd.—645 EG  
Celotex Ltd.—55 C G  
Cement Marketing Co. Ltd.—130 F/G  
Central Tool & Equipment Co. Ltd.—422  
GG  
C. E. T. Ltd.—663 EG  
Chadwick & Shapcott Ltd.—190 H/G,  
195 J/G  
Chamberlain Weatherstrips Ltd.—543 NG  
Chance Brothers Ltd.—430 GG  
Chaseside Engineering Co. Ltd.—68, 69  
D G  
Christensen Ltd.—419 /GG  
Chubb & Son's Lock & Safe Co. Ltd.—8 A G  
Clarke Ellard Engineering Co. Ltd.—496,  
498 GG  
Clifton, I.—614 EG  
Clubley J. Armstrong Dararm Ltd.—559  
NG

Coal Utilisation Council—260 M N  
Cobb, K. L., Ltd.—425 GG  
Cole, E. K., Ltd.—514 NG  
Cole, E. R., Ltd.—435 GG  
Coln River Concrete Units Ltd.—615 EG  
Colt, W. H. (London) Ltd.—231 K G  
Colthurst Symons & Co. Ltd.—84 D G  
Columbus Dixon Ltd.—105 E G  
Compactom Ltd.—60 C/G  
Conatus Industries Ltd.—556, 558 NG  
Concrete Ltd.—31 B/G  
Consolidated Pneumatic Tools Co. Ltd.—  
219 K G  
Contract Journal Co. Ltd.—483 GG  
Cooksley, A. & Co. Ltd.—384 X E  
Copperad Ltd.—44 C/G  
Copper Development Ass'n—307 Q N  
Cornelly—510 NG  
Coronet Tools Company—662 EG  
Corroglaze Limited—603 EG  
Cotswold Dale Stone Co. Ltd.—2 A G  
Crane Ltd.—267 N N  
Crittall Manufacturing Co. Ltd.—98 E G  
Crosby & Co. Ltd.—29a B/G  
Cunningham, W. G.—666 EG

### D

Dahl—412 GG  
Dallow Lambert & Co. Ltd.—373 W/E  
Danckaerts Woodworking Machinery Ltd.  
—394 Y E  
Davies, Alan R.—70 D G  
De La Rue, Thomas, & Co. Ltd. (Plastics)  
—636, 637 EG  
De La Rue, Thomas, & Co. Ltd. (Gas Divi-  
sion)—638 EG  
Deans Blinds (Putney) Ltd.—474 GG  
Deaves, R. J.—415 GG, 561 N/G  
Denison, Saml., & Son Ltd.—250 L/G  
Dept. of Scientific & Industrial Research—  
446, 448, 450, 452, 454 GG  
Dimplex Ltd.—481 GG  
Disinfestation Ltd.—623 EG  
Doe, Ernest, & Sons Ltd.—358 PA  
Dohm Ltd.—240 L/G  
Domestic Installations Co. Ltd.—489 GG  
Dominion Machinery Co. Ltd.—364 V E  
Downing, G. H., & Co. Ltd.—152, 153 G/G  
Drew, Clark & Co. Ltd.—40 C G  
Dry Rot & Fire Prevention Ltd.—616 EG  
Durasteel Ltd.—346, 347 T N

### E

Easiwork Ltd.—562 NG  
Eastwoods Ltd.—154 G G  
Eclipse Rail-Track Ladder Co. Ltd.—123  
F/G  
Econa Modern Products Ltd.—24, 25 B/G  
Edison Swan Electric Co. Ltd.—28 B G  
Ekco-Ensign Electric Ltd.—318 Q N  
Elder Reed, A., & Co. Ltd.—157 G/G  
Electrolux Ltd.—323 R N  
Ellis, John, & Sons Ltd.—284 O N  
Elsy & Gibbons Ltd.—49 C/G  
English Clock Systems Ltd.—183 H/G,  
202 J/G  
English Fireplaces Ltd.—327, 328 R N  
English Joinery Manufacturers Ass'n—  
131 F/G



Lead Sheet and Pipe Council by:  
John Pinckheard

#### E—continued

Esavian Ltd.—40 B/G  
Expanded Metal Co. Ltd.—95, 96 E/G  
Expandite Ltd.—227 K/G  
Ezee Kitchens Ltd.—464, 466 /GG

#### F

Farmiloe, T. & W., Ltd.—329 R/N  
Federated Foundries Ltd.—501 /NG  
Federated Home Timber Associations—  
530, 532 /NG  
Federation of Clinker Block Mfrs.—409  
/GG  
Federation of Master Builders—432 /GG  
Ferodo Ltd.—50 C/G  
Ferranti Ltd.—416 /GG  
Fibreglass Ltd.—241 L/G  
Finch, B. & Co. Ltd.—12, 13, 14A /G  
Finlock Gutters Ltd.—354 T/N  
Fire Offices' Committee Fire Protection  
Association—407 /GG  
Fisons Ltd.—52 C/G  
Flavel, Sydney, & Co. Ltd.—266 N/N  
Flexaire Ltd.—143 G/G  
Flexible Drive & Tool Co. Ltd.—320 R/N  
Flextol Engineering Co. Ltd.—35 B/G  
Foamed Slag Producers Assn.—456a /GG  
Forest Products Research—533 /NG  
Forster, L. G. (Construction) Ltd.—465,  
467 /GG  
Fowell, George, Ltd.—66 C/G  
France—527 /NG  
Frenger Ceilings Ltd.—155 G/G  
Froy, W. N., & Sons Ltd.—304, 305 Q/N

#### G

Gas Council—300 P/N  
Gay, R., & Co.—539 /NG  
General Electric Co. Ltd.—276 N/N  
Gibson, Arthur L., & Co. Ltd.—560 /NG  
Gliksten, J., & Sons Ltd.—144 G/G  
Glow-Worm Boilers Ltd.—265 N/N  
Gold Coast Office—519, 521 /NG  
Golmet Doors Ltd.—668 /EG  
Goodenough Pumps Ltd.—321, 322 R/N  
Goodlass, Wall & Co. Ltd.—492, 494 /GG  
Gotham Company Ltd.—287 O/N  
Greenwood's & Airvac Ventilating Co. Ltd.—  
192 H/G, 193, 194 J/G  
Greenwood, George, & Sons—434 /GG  
Guillet Sons & Co. Ltd.—88 H. A.  
Gulf Radiators Ltd.—244 L/G  
Gyproc Products Ltd.—149 G/G  
Gypsum Mines Ltd.—335, 336 S/N

#### H

Hamilton & Co. (London) Ltd.—319 R/N  
Hanger Paints Ltd.—641 /EG  
Harvey, G. A., & Co. (London) Ltd.—150,  
151 G/G  
Hattersley Brothers Limited—421 /GG  
Hawkhead, Bray & Son Ltd.—664 /EG  
Hawksley, S. M. D.—619 /EG  
Heller & Sons (Engineers) Ltd.—536 /NG  
Hemel Hempstead Engineering Co. Ltd.—  
253 L/G  
Heyman, B.—437 /GG

Hickson's Timber Impregnation Co. (G.B.)  
Ltd.—56 C/G  
Hilger & Watts Ltd.—546 /NG  
Hills, F., & Sons Ltd.—342 S/N  
Hilmor Ltd.—23 B/G  
Holcon Ltd.—47 C/G  
Holloway Metal Roofs Ltd.—462 /GG  
Holoplast Ltd.—618 /EG  
H.M.S.O.—451 /GG  
Hope, Henry, & Sons Ltd.—90, 91 D/G  
Housing Centre Trust—563 /NG

#### I

Ide, T. & W., Ltd.—232 K/G  
Ideal Boilers & Radiators Ltd.—310 Q/N  
Iliffe & Sons Ltd.—145 G/G  
Illustrated Carpenter & Builder—352 T/N  
Imperial Chemical Industries Ltd.—86,  
87 D/G  
Impregnated Diamond Products Ltd.—377  
X/E  
Inertol Co. Ltd.—640 /EG  
Internal Constructions Ltd.—557 /NG  
International Paints Ltd.—564, 566 /NG  
Interwood Ltd.—387 Y/ZE, 398 Z/E

#### J

Jablo Plastics Industries Ltd.—620 /EG  
Janes, H. C., Ltd.—424 /GG  
Janitor Boilers Ltd.—247 L/G  
Jenson & Nicholson Ltd.—100 E/G  
J.K.O. Cutters Ltd.—395 Z/E  
Johnson, C. H. (Machinery) Ltd.—162 &  
163 G/G  
Johnson's Reinforced Concrete Engineer-  
ing Co.—45 C/G  
Joyce, W. N., & Sons Ltd.—243 L/G

#### K

Kane, Douglas—510a /NG  
Kango Electric Hammers Ltd.—179 H/G,  
206 J/G  
Kennedy, W., Ltd.—233 K/G  
Keynon, William, & Sons Ltd.—224 K/G  
Kerner Greenwood & Co. Ltd.—338 S/N  
Kerner Greenwood & Co. Ltd.—292 P/N  
Key Engineering Co. Ltd.—385 X/E  
King, J. A., & Co. Ltd.—134 F/G  
Kings Langley Engineering Co. Ltd.—  
410 /GG  
Klinger, Richard, Ltd.—607 /EG  
Kwikform Ltd.—119, 120 F/G

#### L

Laconite—556, 558 /NG  
Lafarge Aluminous Cement Co. Ltd.—  
78 D/G  
Landmaster Ltd.—356 PA  
Langham Export Co. Ltd.—545, 547 /NG  
Langley London Ltd.—132 F/G  
Langton, H. S.—254 L/G  
Latter, A., & Co. Ltd.—551 /NG  
Lawler, Ayers & Co. Ltd.—279 O/N  
Leaderflush Ltd.—26, 27 B/G  
Lead Sheet & Pipe Council—189 H/G  
196 J/G  
Leeds Fireclay Co. Ltd.—177 H/G, 208 J/G  
Leng, Christopher, & Sons Ltd.—51 C/G  
Limmer & Trinidad Lake Asphalt Co. Ltd.—  
128 F/G  
Liner Concrete Machinery Co. Ltd.—  
271 N/N  
Linoleum Manufacturers' Assoc.—628 E/G  
Lister, R. A., & Co. Ltd.—172, 173 H/G,  
212, 213 J/G  
Lloyds Bank Ltd.—140 G/G  
Loft Ladders Ltd.—495 /GG  
Logical Ltd.—403 /GG  
London Brick Co. Ltd.—97 E/G  
London & Midland Steel Scaffolding Co.  
Ltd.—159 G/G  
London Sand Blast Decorative Glass Works  
Ltd.—148 G/G  
Lyte Ladders Ltd.—19 B/G

#### M

Machinery (Continental) Ltd.—118 F/G  
Mackay Industrial Equipment Ltd.—380  
X/E  
Macks Structures (Birmingham) Ltd.—632,  
633 /EG  
Maidenhead Brick & Tile Co. Ltd.—158  
G/G  
Marks, Leslie, & Co. Ltd.—473 /GG  
Marley Tile Co. Ltd.—181, 182 G/G, 203,  
204 J/G  
Masonite Ltd.—187 H/G, 198 J/G  
Massey-Harris-Ferguson (Sales) Ltd.—381  
X/E  
M.E. Engineering Ltd.—62 C/G  
Mercator Trading Co. Ltd.—651 /EG  
Metal Sections Ltd.—147 G/G  
Meyer, Montague L., Ltd.—306 Q/N  
Midland Bank Ltd.—257 M/N  
Millar's Machinery Co. Ltd.—258, 259 M/N  
Mills Scaffold Co. Ltd.—121, 122 F/G  
Milsom's Patent Precast (Vermiculite) Clad-  
ding—61 C/G  
Ministry of Housing and Local Government  
—455 /GG, 453 /GG  
Ministry of Works—445, 447, 449 /GG  
Mitchell Russel—653 /EG  
Molesey Sheet Metal Works—516 /NG  
Moorsden Ignition Ltd.—616a /EG  
Municipal Journal Ltd.—477 /GG  
Munster Developments Co. (Fulham) Ltd.—  
555 /NG  
Michael Nairn & Co. Ltd.—442 /GG

#### N

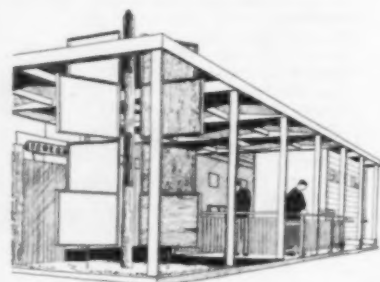
National Builder—4 A/G  
National Coal Board—109 E/G  
National Federation of Building Trades  
Employers—478, 480, 482 /GG  
National Federation of Clay Industries—  
88 D/G  
National Provincial Bank Ltd.—391 Y/E  
New Era Publishing Co. Ltd.—20 B/G  
Newsam, H., Sons & Co. Ltd.—610, 611  
/EG  
Newton, Chambers & Co. Ltd.—262 M/N  
Nigeria Office—526, 528 /NG  
"Noelite" Ltd.—188 H/G  
North Borneo—529, 531 /NG  
North British Plastics Ltd.—541 /NG  
Northern Aluminium Co. Ltd.—639 /EG  
Norton's Plant Hire Ltd.—64 C/G  
Nufford Ltd.—197 J/G  
Nuralite Sales Ltd.—230 K/G

#### O

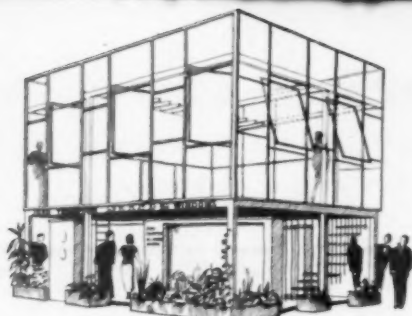
Official Architecture & Planning—350 T/N  
Oliver, William, & Sons Ltd.—139 F/G  
Osman, William—469, 471 /GG  
Ottway, W., & Co. Ltd.—665 /EG

#### P

Packard & Ord Ltd.—414 G/G  
Palmer's Travelling Cradels & Scaffold Co.  
Ltd.—174 H/G, 211 J/G  
Paramount Asphalt & Flooring Co. Ltd.—  
643 /EG  
Parker, Frederick, Ltd.—296, 297 P/N  
Patent Safety Ladder Co. Ltd.—649 /EG



Federated Home Timber Associations  
by: Norman Frith and Joseph Revill



John Thompson Beacon Windows Ltd.  
by: G. Whitby

Peerless Built-in Furniture Ltd.—41 B/G  
Peglers Ltd.—102 E/G  
Pegson Ltd.—59 C/G  
Penfold Fencing & Engineering Ltd.—30 B/G  
Perkins, John, & Smith Ltd.—399 Z/E  
Permutit Co. Ltd.—228 K/G  
Pestcure Ltd.—36 B/G, 405 GG  
Philip Flooring Co. Ltd.—433 GG  
Philips Electrical Ltd.—124 F/G  
Philplug Products Ltd.—225 K/G  
Pickles, John, & Son (Engineers) Ltd.—360 U/E, 370 V/E, 370 W/E  
Pierhead Ltd.—647, 648 EG  
Pilkington Bros. Ltd.—133 F/G  
Pinner, W. G.—601a EG  
Pioneer Mixers Ltd.—345 S/N  
Porosan—600a EG  
Portasilo Ltd.—382 X/E  
Pratt, R., Ltd.—357 PA  
Prefabrication—600 EG  
Prestwich, Industries, J. A., Ltd.—217 K/G  
Price, D. W., & Son Ltd.—351 T/N  
Protim Ltd.—608 EG  
Prowse, Keith, & Co. Ltd.—236 L/G  
P. S. C. Equipment Ltd.—604 EG  
Purimachos Ltd.—503 NG  
Pyreme Co. Ltd.—497, 499 GG  
Pyrok Ltd.—80 D/G

Quickdraw Co. Ltd.—16 A/G  
Quicktho (1928) Ltd.—612 EG

Radiation Group Sales Ltd.—261 M/N  
Randall Wm., & Co. (Horsham) Ltd.—106 E/G  
Range Boilers Ltd.—268 N/N  
Rapid Metal Developments Ltd.—114, 115 E/G  
Rawlplug Co. Ltd.—242 L/G  
Redland Tiles Co. Ltd.—99 E/G  
Redwing Ltd.—476 GG  
Remington Rand Ltd.—438 GG  
Rentokil Ltd.—400, 401, 402 GG  
Revol Ltd.—302 P/N  
Ripolin Ltd.—475 GG  
Road Machines (Drayton) Ltd.—282 O/N  
Roberts, David, & Co. (Engineers) Ltd.—170 H/G, 215 J/G  
Robinson, Thomas & Son Ltd.—369 V/E, 371 W/E  
Rolle, H.—512 NG  
Ronald, S. W. & Co. (London) Ltd.—423 GG  
Roura & Forgas Ltd.—606 EG  
Rowe Brothers & Co. Ltd.—485 GG  
Royal Institution of Chartered Surveyors—572, 573 NG  
Ruberoid Co. Ltd.—308, 309 Q/N  
Russell, Macdonald & Co. Ltd.—246 L/G  
Ruston & Hornsby Ltd.—112, E/G  
Rye Engineering Works (High Wycombe) Ltd.—383 X/E

Sadd, John & Sons, Ltd.—330 R/N  
Safety Tread Ltd.—428 GG  
Sagar, J. & Co. Ltd.—368 V/E, 372 W/E  
Sanbra Ltd.—75 D/G  
Sagar Bursgreen Ltd.—360 U/E  
Sandlime Brick Manufacturers Ass'n. Ltd.—57 C/G  
Sankey, J. H. & Son Ltd.—500, 502 NG  
Saunders, H. A. Ltd.—116, 117 F/G  
Savage, Richard (Agencies) Ltd.—642 EG  
Scaffolding (Gt. Britain) Ltd.—127 F/G, 166 H/G, 444 GG  
Schubert, H., Ltd.—363 U/E, 365 V/E, 375 W/E  
Sealdraught Ltd.—245 L/G  
Sealocrete Products Ltd.—191 H/G  
Secomastic Ltd.—142 G/G  
Selleck, Nicholls & Co. Ltd.—629, 630 EG  
Semtex Ltd.—101 E/G  
Shaftesbury Ladders Ltd.—21, 22 B/G  
Shanks & Co. Ltd.—39 B/G  
Successors to Shapland & Pether Ltd.—334 S/N  
Sharp Bros. & Knight Ltd.—293 P/N  
Shaw, A. & Son (Diamonds) Ltd.—459 GG  
Shearwater Ltd.—621 EG  
Shepherd & Sons Ltd.—415a GG  
Sherry, E., Ltd.—332 S/N  
"Shetack" Tool Works Ltd.—343 S/N  
Shires & Co. (London) Ltd.—277 N/N  
Shockcrete Products Ltd.—613 EG  
Silent-Gliss Ltd.—660 EG  
Silexine Paints Ltd.—43 C/G  
Skarsten Manufacturing Co. Ltd.—429 GG  
Slingsby, H. C. Ltd.—235 K/G  
Smart & Brown (Machine Tools) Ltd.—549 NG  
Smith & Co., John, (London) Ltd.—63 C/G  
Smith, S. & Sons (England) Ltd.—263 M/N  
Smith & Wellstood Ltd.—240, 249 L/G  
Smith's Fireproof Floors Ltd.—294, 295 PN  
Solid Smokeless Fuels Federation—223 K/G  
Solignum Ltd.—493 GG  
Sommerfelds Ltd.—113 E/G  
South Eastern Brick & Tile Federation—92 E/G  
Sponcel Ltd.—404 GG  
Standard Catalogue Co. Ltd.—226 K/G  
Stanley, W. F. & Co. Ltd.—341 S/N  
Steel Radiators Ltd.—301 P/N  
Steel Scaffolding Co. Ltd.—76, 77 D/G  
Stenners of Tiverton Ltd.—367 V/E  
Stephens & Carter Ltd.—326 R/N  
Stewarts & Lloyds Ltd.—324 R/N  
Stothert & Pitt Ltd.—288, 289 O/N  
Stramit Boards Ltd.—237, 238 L/G  
Sundstrand Sanders Ltd.—411 GG  
Surflex Flooring Co. Ltd.—538 NG  
Sussex Cement & Concrete Products—601 EG  
Sussex & Dorking United Brick Companies Ltd.—135, 136 F/G

Taylor, Robert & Co. (Ironfounders) Sales Ltd.—270 N/N  
Technical Feature by Organizers—523, 525 NG  
Tee Beam Structures (Britain) Ltd.—644 EG  
Teleflex Products Ltd.—389 Y/E  
Tella Co. Ltd.—512a NG  
Tella—512a NG  
Terrapin Ltd.—617 EG  
Thermacoust Ltd.—89 D/G  
Thompson, John, Beacon Windows Ltd.—298 P/N  
Thwaites Agricultural Eng. Co. Ltd.—171 H/G, 214 J/G  
Thynne, H. & G. Ltd.—552, 554 NG  
Timber Development Association—299 P/N

Timber Technology—515, 517 NG  
Tin Research Institute—456 GG  
Trianco Ltd.—290, 291 O/N, 294, 295, P/N  
Tretol Ltd.—186 H/G, 199 J/G  
Triplex Foundry Ltd.—269 N/N  
True Flue Ltd.—11 A/G  
Tubewrights Ltd.—542, 544 NG  
Turner, J. A. & Co. Ltd.—652 EG  
Turners Asbestos Cement Co. Ltd.—53, 54 C/G  
Tyre Products Ltd.—479 GG  
Tyzack, S., & Son Ltd.—386 Y/E

Udalls Prestressed Concrete Ltd.—634, 635 EG  
Unique Balance Co. Ltd.—505, 507 NG  
United Kingdom Caterpillar Dealers—167 H/G  
United Merchants Ltd.—125, 126 F/G  
United Sponge Co. Ltd.—417 GG  
United Steel Structural Co. Ltd.—331 S/N  
Universal Asbestos Manufacturing Co. Ltd.—283 O/N

Van Moppes L. M. & Sons (Diamond Tools) Ltd.—443 GG  
Venetian Vogue Ltd.—280 O/N  
Vitrefflex Ltd.—337 S/N  
Vinatex Ltd.—333 S/N  
Vulcan Manufacturing (Wolverhampton) Ltd.—439, 441 GG

Ward, Thos. W. Ltd.—168, 169 H/G  
Ward's Flexible Rod Co. Ltd.—251 L/G  
Ward & Co.—667 EG  
Warerite Ltd.—81 D/G  
Warpy Patent Building Equipment Co. Ltd.—67 D/G  
Warsop Power Tools Ltd.—222 K/G  
Watts (Factors) Ltd.—264 M/N  
Weatherill Ltd. F. E.—379 X/E  
Westland Engineers Ltd.—458, 460 GG  
Westminster Bank Ltd.—568, 569 NG  
White, Thos. & Sons, Ltd.—362 U/E, 366 V/E, 374 W/E  
Whitehill Spindle Tools Ltd.—397 Z/E  
Whitlock Bros. Ltd.—111 EG  
Wibau, G. m. b. H.—359 PA  
Wickham Engineering Co. Ltd.—160, 161 G/G  
Williams, John & Sons (Cardiff) Ltd.—281 O/N  
Williams & Williams, Ltd.—83 D/G  
Wilson Brothers (Leeds) Ltd.—376 W/E  
Wilson (Iberia) Co. Ltd.—646 EG  
Winsorflor Ltd.—661 EG  
Wolf Electric Tools Ltd.—392, 393, Y/E

Yorkshire Copper Works Ltd.—164 G/G  
Youngman, W. C. Ltd.—176 H/G, 209 J/G, 221 K/G

Zinc Alloy Rust Proofing Co. Ltd.—348 T/N  
Zinc Development Association—82 D/G

Berry Wiggins & Co. Ltd.  
by: Olympia Ltd.





EXHIBITORS CLUB

RESTAURANT

ADDISON ROAD ENTRANCE

Stands 193, 194 are occupied by Greenwood and Airco Ventilation Ltd.

NATIONAL HALL

HALL A

HALL B

HALL C

HALL D

HALL E

HALL F

HALL G

HALL H

HALL J

HALL K

HALL L

HALL M

HALL N

HALL O

HALL P

HALL Q

HALL R

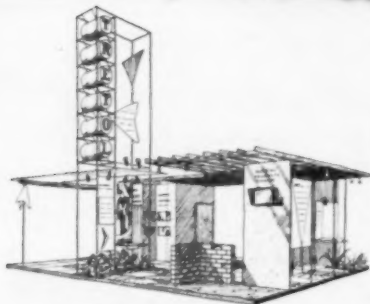
HALL S

HALL T

PORTUGAL AVENUE

HAMMERSMITH ROAD ENTRANCE





## Classified List of Exhibits

Tretol Ltd.  
by:  
Olympia Ltd.

The stands are identified in the same way as  
in the Alphabetical List

### Architectural Metal Work and Wrought Iron Products

Ajax Architectural Products Ltd.—422 /EG  
Allen, Douglas, Ltd.—409 /EG  
Forster, L. G. (Construction), Ltd.—465, 467 /GG  
Gardiner, Sons & Co. Ltd.—89 D/G  
Gibson, Arthur L., & Co. Ltd.—560 /NG  
Molesley Sheet Metal Works—516 /NG  
Scaffolding (Great Britain) Ltd.—127 F/G, 166 H/G, 444 /GG

### Asphalt and Asphalt Mixing Plant

Berend & Berend Ltd.—359 P.A.  
Limmer & Trinidad Lake Asphalt Co. Ltd.—128 F/G  
Wibau G.m.b.H.—359 P.A.

### Associations, Professional and Development

Architects' Benevolent Society.—406 /GG  
British Electrical Development Association.—103, 104 E/G  
British Rubber Development Board.—34 B/G  
British Standards Institution.—10 A/G  
Building Industry Distributors.—570, 571 /NG  
Coal Utilisation Council.—260 M/N  
Copper Development Association.—370 Q/N  
English Joinery Manufacturers' Association (Incorporated)—131 F/G  
Federation of Clinker Block Manufacturers.—409 /GG  
Federation of Master Builders.—432 /GG  
Fire Protection Association.—407 /GG  
Foamed Slag Producers' Federation Ltd.—456a /GG  
Gas Council.—300 P/N  
Housing Centre.—563 /NG  
Lead Sheet & Pipe Council.—189 H/G  
Linoleum Manufacturers' Association.—428 /EG  
National Federation of Building Trades Employers.—478, 480, 482 /GG  
National Federation of Clay Industries.—88 D/G  
Royal Institution of Chartered Surveyors.—572, 573 /NG  
Sandlime Brick Manufacturers' Association, Ltd.—57 C/G  
Society for the Protection of Ancient Buildings.—335a /NG  
Solid Smokeless Fuels Federation.—223 K/G  
South Eastern Brick & Tile Federation.—92 E/G  
Timber Development Association.—299 P/N  
Tin Research Institute.—456 /GG  
Zinc Development Association.—82 D/G

### Banks

Lloyds Bank, Ltd.—140 G/G  
Midland Bank, Ltd.—252 M/N  
National Provincial Bank, Ltd.—391 Y/E  
Westminster Bank, Ltd.—568, 569 /NG

### Barrows, Ladders, Painters' Trussies, etc.

Braby, Fredk., & Co. Ltd.—185 H/G, 200 /J/G  
British Building & Engineering Appliances, Ltd.—164, 165 G/G  
Cayless Bros. (Battersea), Ltd.—17, 18 S/B  
Clifton, I. Sons, Ltd.—414 /EG  
Draw, Clark & Co. Ltd.—48 O/G  
Eclipse Rail-Track Ladder Co., Ltd.—123 F/G  
Langton, H. S.—258 L/G  
London & Midland Steel Scaffolding Co. Ltd.—159 G/G  
Lyte Ladders Ltd.—19 B/G  
M.E. Engineering Ltd.—62 C/G  
Patent Safety Ladder Co. Ltd.—449 EG  
Randall, Wm., & Co. (Horsham), Ltd.—106 E/G  
Scaffolding (Great Britain), Ltd.—127 F/G, 166 H/G, 444 /GG  
Shaftesbury Ladders Ltd.—21, 22 B/G  
Slingsby, H. C., Ltd.—235 K/G  
Steel Scaffolding Co. Ltd.—76, 77 D/G  
Stephens & Carter Ltd.—326 R/N  
Youngman, W. C., Ltd.—176 H/G, 209 J/G, 221 K/G

### Baths, Basins, Sinks, Taps, etc.

Adamsez, Ltd.—180 H/G, 205 J/G  
Allied Ironfounders Ltd.—9 A/G, 658, 659 /EG  
Barking Brassware Co. Ltd.—427 /GG  
Bourner, F. H., & Co. (Engineers) Ltd.—548, 550 /NG  
Cobb, K. L., Ltd.—425 GG  
Dahl Brothers, Ltd.—412 /GG  
Federated Foundries, Ltd.—501 /NG  
Froy, W. N., & Sons, Ltd.—304, 305 Q/N  
Leeds Fireclay Co. Ltd.—177 H/G, 208 J/G  
Peelless Built-In Furniture, Ltd.—41 B/G  
Peglers, Ltd.—101 E/G  
Sanbra, Ltd.—75 D/G  
Shanks & Co. Ltd.—309 B/G

### Bending and Bar Cropping Machinery

Allam, E. P., & Co. Ltd.—325 R/N  
Hilmar, Ltd.—23 B/G  
Kennedy, W., Ltd.—233 K/G  
Lawler, Ayers & Co. Ltd.—279 O/N

### Blockmaking Machinery

Allam, E. P., & Co. Ltd.—325 R/N  
Benton, Edward, & Co. Ltd.—408 /GG  
Cornelly Equipment Co.—510 /NG  
Davies, Alan R.—70 D/G  
Liner Concrete Machinery Co. Ltd.—271 N/N  
Pioneer Mixers, Ltd.—345 S/N  
Trianco, Ltd.—290, 291 O/N, 294, 295 P/N

### Boilers, Ranges, Stoves, Grates and Accessories

Aga Heat Ltd.—5, 6 A/G  
Allied Ironfounders, Ltd.—9 A/G, 658, 659 /EG  
Bell, A. & Co. Ltd.—29 B/G  
Cobb, K. L., Ltd.—425 GG  
Cox, Ltd.—247 N/N  
De La Rue, Thomas, & Co. Ltd.—630 /EG

Federated Foundries, Ltd.—501 /NG  
Flavel, Sydney, & Co. Ltd.—266 N/N  
Glow-Worm Boilers, Ltd.—265 N/N  
Gulf Radiators, Ltd.—242 L/G  
Hattersley Bros., Ltd.—421 /GG  
Hawkhead, Bray & Son, Ltd.—644 EG  
Hemel Hempstead Engineering Co., Ltd.—253 L/G  
Ideal Boilers & Radiators, Ltd.—310 Q/N  
Janitor Boilers, Ltd.—247 L/G  
Logical Fuel Storage Units—403 GG  
Mitchell, Russell & Co. Ltd.—653 EG  
Newton, Chambers & Co. Ltd.—262 M/N  
Radiation Group Sales, Ltd.—261 M/N  
Range Boilers, Ltd.—260 N/N  
Smith & Wallisood, Ltd.—240, 249 L/G  
Taylor, Robert & Co. (Ironfounders), Ltd.—270 N/N  
Trianco, Ltd.—290, 291 O/N  
Triplex Foundry Ltd.—269 N/N  
Watts Automatic Boilers—264 M/N

### Bricks

Accrington Brick & Tile Co. Ltd.—58 C/G  
Cement Marketing Co. Ltd.—130 F/G  
Colthurst, Symons & Co. Ltd.—84 D/G  
Downing, G. H., & Co. Ltd.—152, 153 G/G  
Eastwoods, Ltd.—154 G/G  
Fisons, Ltd.—52 C/G  
London Brick Co. Ltd.—97 E/G  
Maidenhead Brick & Tile Co. Ltd.—158 G/G  
National Coal Board—109 E/G  
National Federation of Clay Industries.—88 D/G  
Redland Tiles, Ltd.—99 E/G  
Sandlime Brick Manufacturers' Association, Ltd.—57 E/G  
Sankey, J. H., & Son, Ltd.—500, 502 /NG  
South Eastern Brick & Tile Federation, Ltd.—92 E/G  
Sussex & Dorking United Brick Cos., Ltd.—135, 136 F/G

### Ceilings (Section)

British Plaster Board (Manufacturing) Ltd.—94 E/G, 626, 627, 650 EG  
Bryce, White & Co. Ltd.—93 E/G  
Burgess Products Co. Ltd.—508 /NG  
Cape Asbestos Co. Ltd.—42 C/G  
Frenger Ceilings, Ltd.—155 G/G  
Turners Asbestos Cement Co. Ltd.—53, 54 C/G

### Cement

Cement Marketing Co. Ltd.—130 F/G  
Lafarge Aluminous Cement Co. Ltd.—78 D/G

### Cements, Acid Proof, Hardeners, Mortar Mixers, Anti-Corrosive, Refractory, etc.

Byrd, A. A., & Co. Ltd.—349 T/N  
Cement Marketing Co. Ltd.—130 F/G  
Kerner, Greenwood & Co., Ltd.—338 S/N  
Lafarge Aluminous Cement Co. Ltd.—78 D/G  
Leeds Fireclay Co. Ltd.—177 H/G, 208 J/G  
Purimachos, Ltd.—503 /NG  
Pyrene Co. Ltd.—497, 499 /GG

Sankey, J. H., & Son, Ltd.—500, 502 /NG  
Sealocrete Products Ltd.—191 H/G  
Semtex, Ltd.—101 E/G  
Tretol, Ltd.—186 H/G, 199 J/G

### Cement and Concrete Paints

Cement Marketing Co. Ltd.—130 F/G  
Ellis, John, & Sons, Ltd.—284 O/N  
Inertol Co., Ltd.—440 /EG  
Sealocrete Products Ltd.—191 H/G

### Cement Silos and Storage

Portasilo, Ltd.—382 X/E

### Cloakroom Fittings

Binns, A. J., Ltd.—303 Q/N  
Econa Modern Products Ltd.—24, 25 B/G  
Finch, B., & Co. Ltd.—12, 13, 14 A/G  
Harvey, G. A., & Co. (London) Ltd.—150, 151 G/G  
Vulcan Manufacturing (Wolverhampton) Ltd.—439, 441 GG  
Youngman, W. C., Ltd.—176 H/G, 209 J/G, 221 K/G

### Clocks

English Clock Systems—183 H/G, 202 J/G

### Colours and Pigments

Elder Reed, A., & Co. Ltd.—157 G/G

### Compressors, Engines, Generators, Prime Movers

Atlas Diesel Co. Ltd.—390 Y/E  
B.S.A. Motor Cycles Ltd.—431 GG  
British Equipment Co. Ltd.—175 H/G, 210 J/G  
Brush Group, Ltd.—312, 313 Q/N  
Chasseide Engineering Co. Ltd.—68, 69 D/G  
Doe, Ernest & Sons, Ltd.—358 P.A.  
Lister, R. A., & Co. Ltd.—172, 173 H/G, 212, 213 J/G  
Massey-Harris-Ferguson (Sales), Ltd.—351 X/E  
Moorsden Ignition & Accessories Co.—616a /EG  
Prestwich, J. A., Industries, Ltd.—217 K/G  
Ruston & Hornsby, Ltd.—112 E/G

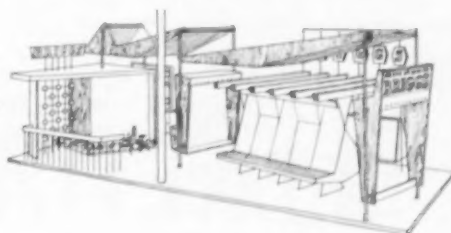
### Concrete Machinery, Mixers

Benford, Ltd.—73, 74 D/G  
Benton, Edward, & Co. Ltd.—408 D/G  
Cornelly Equipment Co.—510 /NG  
Fowell, George, Ltd.—66 C/G  
Liner Concrete Machinery Co. Ltd.—271 N/N  
M. E. Engineering, Ltd.—62 C/G  
Millars Machinery Co. Ltd.—258, 259 M/N  
Parker, Frederick, Ltd.—296, 297 P/N  
Pioneer Mixers Ltd.—345 S/N  
Stephens & Carter, Ltd.—326 R/N  
Stothert & Pitt, Ltd.—188, 289 O/N  
Trianco, Ltd.—290, 291 O/N, 294, 295 P/N  
Ward, Thos. W., Ltd.—168, 169, H/G, 216 J/G  
Wistlor, Ltd.—218 K/G



Compactom Ltd.

William Briggs & Sons  
by: R. C. Carvell





**Hicksons  
Timber  
Impregnation  
Co. Ltd.  
by:  
R. T. Smithson**

**Concrete Machinery, Shuttering Forms**

Acrow (Engineers), Ltd.—107, 108 E.G. 426 /GG, 506 /NG  
Braby, Fredk., & Co. Ltd.—105 H/G, 200 /G  
British Building & Engineering Appliances, Ltd.—164, 165 G/G  
Kwikform, Ltd.—119, 120 F/G  
Mould, A. B., & Construction Co. Ltd.—220 K/G  
Rapid Metal Developments, Ltd.—114, 115 F/G  
Roberts, David, & Co. (Eng.) Ltd.—170 H/G, 215 /G  
Scaffolding (Great Britain), Ltd.—127 F/G, 146 H/G, 444 /GG

**Concrete Machinery, Vibrators**

A.C.E. Machinery, Ltd.—205, 206 O/N  
Allam, E. P., & Co. Ltd.—325 R/N  
Cable Covers, Ltd.—634, 635 /EG  
Cornelly Equipment Co.—510 /NG  
Flexible Drive & Tool Co. Ltd.—320 R/N  
Johnson, C. H. (Machinery), Ltd.—162, 163 G/G  
Roberts, David, & Co. (Eng.) Ltd.—170 H/G, 215 /G  
Stothert & Pitt Ltd.—200, 209 O/N

**Concrete—Vacuum Process**

Millars Machinery Co. Ltd.—250, 259 M/N

**Contractors Plant**

Allam, E. P., & Co. Ltd.—325 R/N  
Atlas Diesel Co. Ltd.—390 Y/E  
British Building & Engineering Appliances, Ltd.—164, 165 G/G  
British Equipment Co. Ltd.—175 H/G, 210 /G  
British Hoist & Crane Co. Ltd.—110 E/G  
Consolidated Pneumatic Tool Co. Ltd.—219 K/G  
Johnson, C. H. (Machinery), Ltd.—162, 163 G/G  
Kango Electric Hammers, Ltd.—179 H/G, 206 /G  
Kwikform, Ltd.—119, 120 F/G  
Liner Concrete Machinery Co. Ltd.—271 N/N  
London & Midland Steel Scaffolding Co. Ltd.—159 G/G  
Machinery (Continental) Ltd.—118 F/G  
M.E. Engineering, Ltd.—62 C/G  
Mould, A. B., & Construction Co. Ltd.—220 K/G  
Nortons Plant Hire, Ltd.—64 C/G  
Pegson, Ltd.—59 C/G  
Rapid Metal Developments, Ltd.—114, 115 F/G  
Road Machines (Drayton) Ltd.—202 O/N  
Roberts, David, & Co. (Eng.) Ltd.—170 H/G  
Sommerfelds, Ltd.—113 E/G  
Stephens & Carter, Ltd.—326 R/N  
Warsop Power Tools, Ltd.—222 K/G  
Wibau G.m.b.H.—359 P.A.

**Cranes, Hoists, Conveyors and Fittings**

A.C.E. Machinery, Ltd.—205, 206 O/N  
British Hoist & Crane Co. Ltd.—110 E/G  
Davies, Alan R.—70 D/G  
Doe, Ernest, & Sons, Ltd.—350 P.A.  
Johnson, C. H. (Machinery) Ltd.—162, 163 G/G  
Machinery (Continental) Ltd.—118 F/G  
Millars Machinery Co. Ltd.—250, 259 M/N

Parker, Frederick, Ltd.—296, 297 P/N  
Tubwrights, Ltd.—542, 544 /NG  
Ward, Thos. W., Ltd.—168, 169 H/G, 216 /G  
Warry Patent Building Equipment Co. Ltd.—47 D/G  
Wickham Engineering Co. Ltd.—160, 161 G/G

**Dampcourses, Roofing Felt and Waterproofing Materials**

Berry, Wiggins Ltd.—I A/G  
Burtain, Ltd.—15 A/G  
Byrd, A. A., & Co. Ltd.—349 T/N  
Cement Marketing Co. Ltd.—130 F/G  
Copper Development Association—307 Q/N  
Imperial Chemical Industries, Ltd.—86, 87 D/G  
Kerner Greenwood & Co. Ltd.—330 S/N  
Limmer & Trinidad Lake Asphalt Co. Ltd.—120 F/G  
National Coal Board—109 E/G  
Nufloor, Ltd.—197 J/G  
Purimachos, Ltd.—503 /NG  
Ruberoil Co. Ltd.—300, 309 Q/N  
Silixine Paints, Ltd.—43 C/G  
Solignum, Ltd.—493 /GG  
Tretol, Ltd.—186, H/G, 199 /G

**Door and Window Furniture**

Associated Brassfounders, Birmingham Ltd.—553 /NG  
Binns, A. J., Ltd.—303 Q/N  
Dahl Brothers, Ltd.—412 /GG  
Deans Blinds (Putney) Ltd.—474 /GG  
Froy, W. N., & Sons, Ltd.—304, 305 Q/N  
Silent Glas, Ltd.—460 /EG  
Teleflex Products Ltd.—389 Y/E  
Unique Balance Co. Ltd.—505, 507 /NG  
Vulcan Manufacturing (Wolverhampton), Ltd.—439, 441 /GG

**Doors, Board and Composition**

Hills, F., & Sons, Ltd.—342 S/N  
Jablo Plastics Industries, Ltd.—620 /EG

**Doors, Garage and Industrial**

Acrow (Engineers) Ltd.—107, 108 E/G 426 /GG, 506 /NG  
Bolton Gate Co. Ltd.—184 H/G, 201 /G  
Clarke, Ellard Engineering Co. Ltd.—496, 498 /GG  
Gibson, Arthur, L. & Co. Ltd.—560 /NG  
Golmet Doors Ltd.—668 /EG  
Westland Engineers Ltd.—450, 460 /GG

**Doors, Metal**

Bolton Gate Co. Ltd.—184 H/G, 201 /G  
Braby, Fredk., & Co. Ltd.—185 H/G, 200 /G  
Durasteel, Ltd.—346, 347 T/N  
Esavian, Ltd.—40 B/G  
Hope, Henry, & Sons, Ltd.—90, 91 D/G  
Thompson, John, Beacon Windows, Ltd.—300 P/N  
Williams, John & Sons (Cardiff), Ltd.—201 O/N  
Williams & Williams, Ltd.—83 D/G

**Doors, Wood**

Austins of East Ham, Ltd.—484, 486 /GG  
British Gates—509, 511 /NG

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Boulton & Paul, Ltd.—314, 315 Q/N  
Bryce, Whise & Co. Ltd.—93 E/G  
Clarke, Ellard Engineering Co. Ltd.—496, 498 /GG  
Crosby & Co. Ltd.—29a B/G  
Esavian, Ltd.—40 B/G  
Gliksten, J., & Son, Ltd.—144 G/G  
Hills, F., & Sons, Ltd.—342 S/N  
James, H. C., Ltd.—424 /GG  
Leaderflush, Ltd.—26, 27 B/G  
Sadd, John, & Sons, Ltd.—330 R/N  
Shapland & Pector, Ltd.—334 S/N  
Sharp Bros. & Knight, Ltd.—293 P/N

**Drain Cleaning and Testing Equipment**

Cayless Bros. (Battersea), Ltd.—17, 18 B/G  
Shetack Tool Works, Ltd.—343 S/N  
Ward's Flexible Rod Co. Ltd.—251 L/G

**Draught Excluders**

Avery, J., & Co. (Est. 1834), Ltd.—436 /GG  
Chamberlin Weatherstrips, Ltd.—543 /NG  
Rollett, H., & Co. Ltd.—512 /NG  
Sealdraught, Ltd.—245 L/G

**Drawing Office and Surveying Equipment**

Austin & Tringham—457 /GG  
Hilger & Watts, Ltd.—544 /NG  
Ottway, W., & Co. Ltd.—665 /EG  
Pinner, W. G., & Co. Ltd.—601a /EG  
Quickdraw Co. Ltd.—16 A/G  
Stanley, W. F., & Co. Ltd.—341 S/N

**Drills and Drilling Equipment**

Adam & Harvey (Rapid Hammer), Ltd.—456, 457 /EG  
Black & Decker, Ltd.—491 /GG  
Bridges, S. N., & Co. Ltd.—316, 317 Q/N  
Cole, E. R., Ltd.—435 /GG  
Elder Reed, A., & Co. Ltd.—157 G/G  
Flexible Drive & Tool Co. Ltd.—320 R/N  
Flextol Engineering Co. Ltd.—35 E/G  
Impregnated Diamond Products, Ltd.—377 X/E  
Langham Export Co. Ltd.—545, 547 /NG  
Pegson, Ltd.—59 C/G  
Perkins, John M., & Smith, Ltd.—399 Z/E  
Rawplug Co. Ltd.—242 L/G  
Shaw, A., & Son (Diamonds) Ltd.—459 /GG  
Warsop Power Tools, Ltd.—222 K/G  
Wolf Electric Tools, Ltd.—392, 393 Y/E

**Ducting**

Braby, Fredk., & Co. Ltd.—185 H/G, 200 /G  
Burgess Products Co. Ltd.—508 /NG  
Ductube Co. Ltd.—634, 635 /EG  
General Electric Co. Ltd.—276 N/N  
Greenwood's & Airvac Ventilating Co. Ltd.—192 H/G, 193, 194 /G  
Key Engineering Co. Ltd.—292 P/N

**Dumpers, Dozers and Earth Moving Equipment**

Aveling-Barford, Ltd.—71, 72 D/G  
Bray, W. E., & Co. Ltd.—65 C/G  
Chasidie Engineering Co. Ltd.—60, 69 D/G  
Fowell, George, Ltd.—66 C/G  
Johnson, C. H. (Machinery), Ltd.—162, 163 G/G

Landmaster, Ltd.—356 P.A.  
Liner Concrete Machinery Co. Ltd.—271 N/N  
Mackay Industrial Equipment, Ltd.—380 X/E  
Massey-Harris-Ferguson (Sales) Ltd.—381 X/E  
Nortons Plant Hire, Ltd.—64 C/G  
Pratts, R. Ltd.—357 P.A.  
Road Machines (Drayton) Ltd.—202 O/N  
Saunders, H. A., Ltd.—116, 117 F/G  
Thwaites Agricultural Engineering Co. Ltd.—171 H/G, 214 /G  
United Kingdom Caterpillar Dealers—167 H/G  
Weatherill, F. E., Ltd.—379 X/E  
Whitlock Bros., Ltd.—111 E/G  
Wickham Engineering Co. Ltd.—160, 161 G/G  
Wistlor, Ltd.—218, K/G

**Dust Control Equipment**

Dallow, Lambert & Co. Ltd.—373 W.E

**Excavators**

Atlas Diesel Co. Ltd.—390 Y/E  
Bamford, J. C.—255, 256 L/G  
Doe, Ernest, & Sons Ltd.—350 P.A.  
Pratt, R., Ltd.—357 P.A.  
Saunders, H. A., Ltd.—116, 117 F/G  
Whitlock Bros., Ltd.—160, 161 G/G  
Wistlor, Ltd.—218 K/G

**Fencing and Gates**

Allen, Douglas, Ltd.—609 /EG  
Austins of East Ham, Ltd.—484, 486 /GG  
Binns, A. J., Ltd.—303 Q/N  
Boulton & Paul, Ltd.—314, 315 Q/N  
British Gates—509, 511 /NG  
Calders, Ltd.—239 L/G  
Forster, L. G. (Construction) Ltd.—465, 467 /GG  
Holcon, Ltd.—47 C/G  
Molesley Sheet Metal Works—516 /NG  
Penfold Fencing & Engineering, Ltd.—30 B/G  
Tubewrights, Ltd.—542, 544 /NG  
"W" Prefabricated Concrete Buildings Ltd.—654, 655 /EG

**Fireplaces**

Bell, A., & Co. Ltd.—29 B/G  
Candy & Co. Ltd.—130 F/G  
Eastwoods Specialists, Ltd.—154 G/G  
Froy, W. N., & Sons, Ltd.—304, 305 Q/N  
Packard & Ord, Ltd.—414 G/G  
Thynne, H. & G., Ltd.—552, 554 /NG

**Fires, Electric**

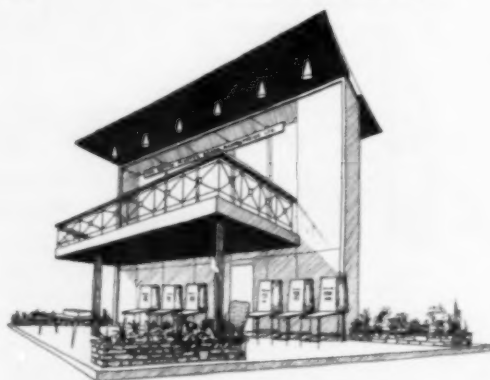
Ferranti, Ltd.—416 /GG  
General Electric Co. Ltd.—276 N/N

**Floor Polishing and Cleaning Machines**

Cole, E. R., Ltd.—435 /GG  
Columbus Dixon Organisation—105 E/G  
Elder Reed, A., & Co. Ltd.—157 G/G  
Flextol Engineering Co. Ltd.—35 B/G  
Nufloor, Ltd.—197 /G

**Floors and Floor Coverings, Asbestos**

Armstrong Cork Co. Ltd.—46 C/G  
Cape Asbestos Co. Ltd.—42 C/G



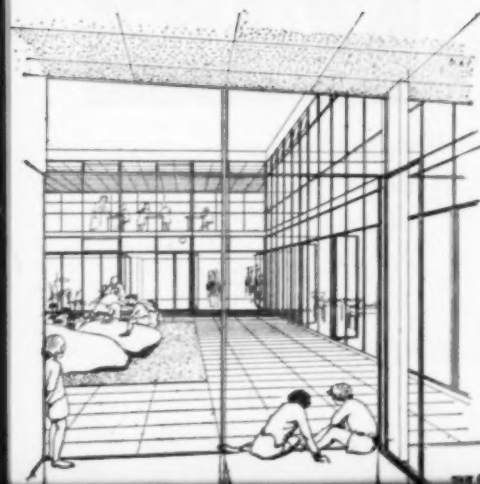
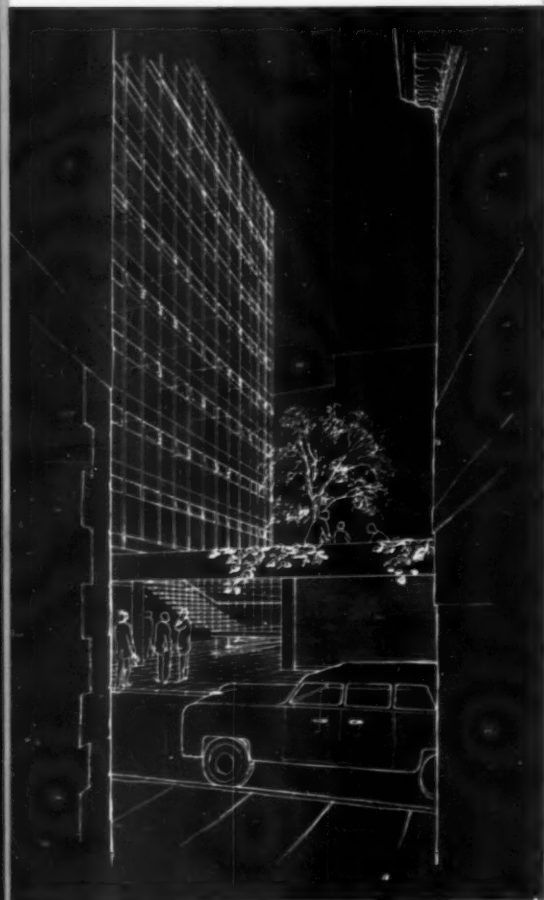
**British Plaster Board (Manufacturing) Ltd.  
by: Ronald Dickens**

THE ARCHITECT and Building News, 10 November 1955



## CRITTALL FENESTRA WALL


Crittall Fenestra Wall brings to the building industry the answer to a need that architects themselves have made clear—window walls of glass and solid panels; economical, flexible and safe.



The basic—and unique—principle of Crittall Fenestra Wall lies in the separation of the cladding elements from the structural elements. This Crittall system introduces a new and remarkable flexibility to curtain wall construction which is particularly economical and offers exciting new prospects in the field of design. Write for Catalogue 175 which gives full details of the Crittall Fenestra Wall system.

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*Fifteen minutes to get him, five fumbling minutes to find the right key . . . Funnily enough, many firms think this security system is out of date ; they prefer the convenience of a YALE master-keyed suite. Master and sub-master keys open only those suites of locks allotted to them, whilst the Grand Master Key can open up to 12,000 different locks. Master-keyed suites are among the many YALE products which bring security, convenience and dignity to doors of every kind — in factories, offices, hotels, homes and many other buildings.*

Where there's a door there's a need for

**YALE**  
REGISTERED TRADE MARK

MASTER-KEYED SUITES  
DOOR CLOSERS  
DOOR FURNITURE  
LOCKS

*The Yale & Towne Manufacturing Company • British Lock & Hardware Division • Willenhall • Staffs • England*

## CLASSIFIED LIST

**Aga Heat Ltd.**  
by: Arthur Braven



### Floors, Asphalt

Burtain, Ltd.—15 A G  
Limmer & Trinidad Lake Asphalt Co.  
Ltd.—120 F G

### Floors, Clay

National Federation of Clay Industries.  
—30 D G

### Floors, Composition

Adamite Co. Ltd.—565 /NG  
Armstrong Cork Co. Ltd.—46 C/G  
Bennett, S., & Son (Wood Flooring).  
Ltd.—461, 463 /GG  
Burtain, Ltd.—15 A G  
Nairn, Michael, & Co. Ltd.—442 /GG  
Philip Flooring Co. Ltd.—433 /GG  
Sealcrete Products, Ltd.—191 H/G  
Surflex Flooring Co.—538 /NG

### Floors, Concrete

Concrete, Ltd.—31 B/G  
Cotswold Dale Stone Co. Ltd.—2 A/G  
Greenwood, George, & Sons—434  
GG  
Pierhead Ltd.—647, 648 /EG  
Smith's Fireproof Floors, Ltd.—294,  
295 P/N

### Floors, Cork

Armstrong Cork Co. Ltd.—46 C/G  
Bennett, S., & Son (Wood Flooring).  
Ltd.—461, 463 /GG  
Burtain, Ltd.—15 A G  
Limmer & Trinidad Lake Asphalt  
Co. Ltd.—120 F/G  
Philip Flooring Co. Ltd.—433 /GG  
Semtex, Ltd.—101 E/G

### Floors, Heavy Duty

Adamite Co. Ltd.—565 /NG  
Limmer & Trinidad Lake Asphalt  
Co. Ltd.—120 F/G  
Surflex Flooring Co. Ltd.—538 /NG

### Floors, Linoleum

Limmer & Trinidad Lake Asphalt  
Co. Ltd.—120 F/G  
Linoleum Manufacturers' Association.  
—628 /EG  
Nairn, Michael, & Co. Ltd.—442 /GG  
Philip Flooring Co. Ltd.—433 /GG  
Semtex, Ltd.—101 E/G

### Floors, Rubber

Bennett, S., & Son (Wood Flooring).  
Ltd.—461, 463 /GG  
British Rubber Development Board.  
—34 B/G  
Burtain, Ltd.—15 A/G  
Marks, Leslie, & Co. Ltd.—473 /GG  
Philip Flooring Co. Ltd.—433 /GG  
Semtex, Ltd.—101 E/G  
Tyre Products, Ltd.—479 /GG

### Floors, Tile

Accrington Brick & Tile Co. Ltd.—  
58 C/G  
Downing, G. H., & Co. Ltd.—152, 153  
G/G  
Langley, London, Ltd.—122 F/G  
Leeds Fireclay Co. Ltd.—177 H/G,  
208 /J/G  
Marley Tile Co. Ltd.—181, 182 H/G,  
203, 204 S/G  
Sankey, J. H., & Son, Ltd.—300, 302  
/NG

### Floors, Wood

Acme Flooring & Paving Co. (1904).  
Ltd.—418, 420 /GG

Bennett, S., & Son (Wood Flooring).  
Ltd.—461, 463 /GG  
Burtain, Ltd.—15 A G  
Calders, Ltd.—239 L/G  
Philip Flooring Co. Ltd.—433 /GG  
Sherry & Haycock, Ltd.—332 S/N  
Winsorfloor, Ltd.—660, 661 /EG

### Flues, and Flue Units

Newton, Chambers & Co. Ltd.—262  
M/N  
Marley Tile Co. Ltd.—181, 182 H/G,  
203, 204 /J/G  
Radiation Group Sales, Ltd.—261 M/N  
True-Flue Ltd.—11 A/G  
Watts Automatic Boilers.—264 M/N

### Glass, including Bricks, Blocks, Tiling, Decorative

Chance Brothers, Ltd.—430 /GG  
Corroglaze, Ltd.—403 /EG  
Farmiloe, T. & W., Ltd.—329 R/N  
Ide, T. & W., Ltd.—232 K/G  
King, J. A., & Co. Ltd.—134 F/G  
London Sand Blast Decorative Glass  
Works, Ltd.—148 G/G  
Pilkington Brothers, Ltd.—133 F/G  
Price, D. W., & Son, Ltd.—351 T/N

### Glues and Adhesives

Aero Research, Ltd.—602 /EG  
Aga Trading Co. Ltd.—605 /EG  
Armstrong Cork Co. Ltd.—46 C/G  
B. B. Chemical Co. Ltd.—431 /EG  
Berry Wiggins, Ltd.—1 A/G  
Tretol, Ltd.—186 H/G, 199 /J/G

### Government Council, and Educational Departments

British Railways—396 Z/E  
Building Research Station and Depart-  
ment of Scientific & Industrial  
Research.—446, 448, 450, 452,  
454 /GG  
Forest Products Research Laboratory.  
—533 /NG  
Her Majesty's Stationery Office.—451  
/GG  
Ministry of Housing and Local Govern-  
ment.—455 /GG  
Ministry of Works.—445, 447, 449 /GG

### Hammers, Bolt Driving Guns

Adam & Harvey (Rapid Hammer), Ltd.  
—656, 657 /EG  
Bourner, F. H., & Co. (Engineers), Ltd.  
—540, 550 /NG  
Cole, E. R., Ltd.—435 /GG  
Langham Export Co. Ltd.—545, 547  
/NG  
Roura & Forgas, Ltd.—606 /EG

### Hardwoods and Softwoods, Timber Merchants

Calders, Ltd.—239 L/G  
Glikstein, L., & Son, Ltd.—144 G/G  
Meyer, Montague, L., Ltd.—304 Q/N  
Oliver, Wm., & Sons, Ltd.—139 F/G  
Sherry, E., Ltd.—332 S/N

### Heat Pumps

Brentford Electric Ltd.—334 S/N  
Domestic Installations Co. Ltd.—  
489 /GG  
Ferranti, Ltd.—416 /GG

### Hollow Blocks

Downing, G. H. & Co., Ltd.—152, 153  
G/G  
Holcon, Ltd.—47 C/G  
London Brick Co. Ltd.—97 E/G  
Pilkington Brothers, Ltd.—133 F/G  
Smith's Fireproof Floors, Ltd.—294,  
295 P/N

Sussex Cement & Concrete Products.  
—601 /EG  
Tee Beam Structures (Britain), Ltd.—  
644 /EG  
"W" Prefabricated Concrete Buildings  
Ltd.—654 655 /EG

### Hospital Equipment

Adamsex, Ltd.—180 H/G, 205 /G  
Avery, J., & Co. (Est. 1834), Ltd.—  
436 /GG  
Froy, W. N., & Sons, Ltd.—304, 305  
Q/N  
Gardiner, Sons, & Co. Ltd.—89 D/G  
Leeds Fireclay Co. Ltd.—177 H/G, 208  
/G  
Shanks & Co., Ltd.—39 B/G

### Insecticides, Fumigators and Wood Preservatives

Brandram Brothers & Co. Ltd.—440  
GG  
Calders, Ltd.—239 L/G  
Disinfection, Ltd.—433 /EG  
Dry Rot & Fire Prevention Co. Ltd.—  
616 /EG  
Hickson's Timber Impregnation Co.  
(G.B.) Ltd.—56 C/G  
National Coal Board.—109 E/G  
Pesture, Ltd.—36 B/G, 405 /GG  
Protim, Ltd.—608 /EG  
Rentokil, Ltd.—400-402 /GG  
Ripolin, Ltd.—475 /GG  
Silex Paints, Ltd.—43 C/G  
Solignum, Ltd.—493 /GG  
Woodworm & Dry Rot Control, Ltd.  
—402 /GG

### Insulating Boards and Materials

Berry Wiggins, Ltd.—1 A/G  
British Plaster Board Manufacturing.  
Ltd.—94 E/G  
British Plumber, Ltd.—178 H/G, 207  
/J/G  
Cape Asbestos Co. Ltd.—42 C/G  
Celcon, Ltd.—445 /EG  
Celotex, Ltd.—55 C/G  
Dohm, Ltd.—240 L/G  
Fibraglass, Ltd.—241 L/G  
Glikstein, J., & Son, Ltd.—141 G/G  
Gyproc Products, Ltd.—149 G/G  
Kenyon, William, & Sons, Ltd.—224  
K/G  
Masonite, Ltd.—187 H/G, 198 /J/G  
Pyrene Co. Ltd.—497, 499 /GG  
Pyrok, Ltd.—80 D/G  
Sankey, J. H., & Son Ltd.—300, 302  
/NG  
Stramit Boards, Ltd.—237, 238 L/G  
Turners Asbestos Cement Co. Ltd.—  
53, 54 C/G  
Universal Asbestos Manufacturing Co.  
Ltd.—283 Q/N

### Joinery, Carvings, Mouldings and Panelling

Austins of East Ham, Ltd.—484, 486  
/GG  
Boulton & Paul, Ltd.—314, 315 Q/N  
Bryce, White & Co. Ltd.—93 E/G  
English Joinery Manufacturers'  
Association (Incorporated)—131  
F/G  
Janet, M. C., Ltd.—434 /GG  
Sadd, John & Sons, Ltd.—320 R/N  
Sharp Bros. & Knight, Ltd.—293 P/N  
Shapland & Pectter, Ltd.—334 S/N  
Sherry, E., Ltd.—332 S/N

### Joint Sealing Compounds and Expansion Jointings

Alabastine, Ltd.—154 G/G  
B. B. Chemical Co. Ltd.—431 /EG  
Celotex, Ltd.—55 C/G  
Expandite, Ltd.—227 K/G  
Gyproc Products, Ltd.—149 G/G  
Masonite, Ltd.—187 H/G, 198 /J/G  
Philpug Products, Ltd.—225 K/G  
Ruberoid Co. Ltd.—308, 309 Q/N

Secomastic, Ltd.—142 G/G  
Surflex Flooring Co.—538 /NG

### Kiln Drying Machinery

Bachrich Patents, Ltd.—278 N/N

### Kitchen and Canteen Equipment and Fittings

Austins of East Ham, Ltd.—484, 486  
/GG  
Boulton & Paul, Ltd.—314, 315 Q/N  
Cobb, K. L., Ltd.—425 /GG  
Dahl Brothers, Ltd.—412 /GG  
De La Rue, Thomas, & Co., Ltd.—  
636, 637 /EG  
Easiwork, Ltd.—562 /NG  
English Joinery Manufacturers' Associa-  
tion (Incorporated)—131 F/G  
Ezee Kitchens, Ltd.—414, 466 /GG  
Froy, W. N., & Sons, Ltd.—304, 305  
Q/N  
North British Plastics, Ltd.—541 N/G  
Peerless Built-In Furniture, Ltd.—41  
B/G  
Redwing, Ltd.—476 /GG  
Sadd, John, & Sons Ltd.—330 R/N  
Sharp Bros. & Knight, Ltd.—293 P/N  
Smith & Wellstood, Ltd.—240, 249  
L/G  
Triplex Foundry Ltd.—269 N/N  
Wallis & Co. (Long Eaton) Ltd.—  
9 A/G  
Warerite, Ltd.—81 D/G

### Domestic, Floodlighting and Streetlighting

British Electrical Development Associa-  
tion.—103, 104 E/G  
Edison Swan Co. Ltd.—28 B/G  
Elico-Ensign Electric, Ltd.—318 Q/N  
General Electric Co. Ltd.—276 N/N  
Philips Electrical, Ltd.—124 F/G

### Locks and Safes

Associated Brassfounders, Birmingham  
Ltd.—553 /NG  
Binns, A. J., Ltd.—303 Q/N  
Chubb & Son's Lock & Safe Co. Ltd.  
—8 A/G  
Vulcan Manufacturing (Wolverhampton)  
Ltd.—439, 441 /GG

### Loft Ladders

Drew, Clark & Co. Ltd.—48 C/G  
Loft Ladders, Ltd.—495 /GG  
Slingsby, M. C., Ltd.—235 K/G

### Marbles and Mosaics

Carter Group of Companies.—85 D/G  
Elder Reed, A., & Co. Ltd.—157 G/G  
Holcon, Ltd.—47 C/G

### Metal Fire Escapes and Stair- cases

Expanded Metal Co. Ltd.—95, 96 E/G  
Forster, L. G. (Construction), Ltd.—  
465, 467 /GG  
Safety Tread, Ltd.—428 /GG  
Williams & Williams, Ltd.—83 D/G

### Metal Preservatives and Rust- proofings

National Coal Board.—109 E/G  
Solignum, Ltd.—493 /GG

### Mouldings Compound

Vinatex, Ltd.—333 S/N

### Oil Fired Equipment

Brockhouse Heater Co. Ltd.—424, 425  
/EG  
Domestic Installations Co. Ltd.—489  
/GG  
Glow-Worm Boilers, Ltd.—265 N/N  
Smith, S., & Sons (England) Ltd.—  
263 M/N  
Watts Automatic Boilers.—264 M/N



Universal Asbestos Manufacturing Co. Ltd.  
by: V. J. Hutchings



**Bryce,  
White  
& Co. Ltd.  
by:  
Olympia  
Ltd.**

#### ●Office Equipment and Services

Architects Classfile, Ltd.—252 L/G  
Avery, J. & Co. (Est. 1834), Ltd.—  
436 /GG  
Harvey, G. A., & Co. (London), Ltd.—  
150, 151 G/G  
Remington Rand, Ltd.—438 /GG

#### ●Paint Brushes, Rollers, Decorators' Tools and Equipment

Brandram Brothers & Co. Ltd.—  
440 /GG  
Briton Brush Co. Ltd.—353 T/N  
Chadwick & Shapcott, Ltd.—190 H/G,  
195, 196 /G  
Eclipse Rail-Track Ladder Co. Ltd.—  
123 F/G  
Farmiloe, T. & W. Ltd.—329 R/N  
Goodlass, Wall & Co. Ltd.—492, 494  
/GG  
Hamilton & Co. (London) Ltd.—319  
R/N  
Heller & Sons (Engineers) Ltd.—536  
/NG  
Heyman, B.—437 /GG  
Leng, Christopher, & Sons, Ltd.—81  
C/G  
Marks, Leslie, & Co. Ltd.—473 /GG  
Russell, Macdonald & Co. Ltd.—246  
L/G  
Sponcel, Ltd.—404 /GG  
United Sponge Co. Ltd.—417 /GG

#### ●Paint and Rust Removers

Skarsten Manufacturing Co. Ltd.—  
429 /GG  
Wickham Engineering Co. Ltd.—160,  
161 G/G

#### ●Paints, Varnishes, Enamels, Dis- tempers, Stains

Berger, Lewis (Great Britain), Ltd.—  
311 Q/N  
Berry Wiggins, Ltd.—1 A/G  
Blundell, Spence & Co. Ltd.—339, 340  
S/N  
British Lead Mills, Ltd.—504 /NG  
Farmiloe, T. & W. Ltd.—329 R/N  
Gay, R., & Co.—539 /NG  
Hangers, Paints Ltd.—441 /EG  
Imperial Chemical Industries, Ltd.—  
86, 87 D/G  
International Paints Ltd.—564, 566  
/NG  
Jenson & Nicholson, Ltd.—100 E/G  
Ripolin, Ltd.—475 /GG  
Silexine Paints, Ltd.—43 C/G  
Trelat, Ltd.—186 H/G, 199 /G

#### ●Papers, Wall and Waterproof

Aga Trading Co. Ltd.—605 /EG  
Joyce, W. N. & Sons, Ltd.—243 L/G  
Latter, A., & Co. Ltd.—531 /NG  
Sankey, J. H., & Son, Ltd.—500, 502  
/NG  
Turner, J. A., & Co. Ltd.—652 /EG

#### ●Partitions

Acrow (Engineers), Ltd.—170, 180  
E/G, 428 /GG, 506 /NG  
Ashdowns, Ltd.—480, 490 /GG  
Bellrock Gypsum Industries, Ltd.—  
229 K/G  
Braby, Fredk., & Co. Ltd.—185 H/G,  
200 /G  
British Plumber, Ltd.—178 H/G, 207  
J/G

Cascolloid—540 /NG  
Compactom, Ltd.—60 C/G  
Corroglaze, Ltd.—403 /EG  
Easvian, Ltd.—40 B/G  
Gyproc Products, Ltd.—149 G/G  
Harvey, G. A., & Co. (London), Ltd.—  
150, 151 G/G  
Holoplast, Ltd.—610 /EG  
Internal Constructions, Ltd.—557 /NG  
North British Plastics, Ltd.—541 /NG  
Rowe Brothers & Co., Ltd.—485 /GG  
Savage, Richard, (Agencies), Ltd.—  
443 /EG  
Shearwater, Ltd.—421 /EG  
Stramit Boards, Ltd.—237, 238 L/G  
Williams, John, & Sons (Cardiff), Ltd.—  
281 O/N  
Williams & Williams, Ltd.—83 D/G

#### ●Partitions, Sliding and Folding

Avery, J., & Co. (Est. 1834), Ltd.—  
436 /GG  
Bolton Gate Co. Ltd.—184 H/G, 201  
J/G  
Clarke, Ellard Engineering Co. Ltd.—  
496, 498 /GG  
Easvian, Ltd.—40 B/G  
Home Fittings (Great Britain), Ltd.—  
624, 625 /EG

#### ●Pavement Lights

King, J. A., & Co. Ltd.—134 F/G

#### ●Paving Stones and Slabs

Banks, W. P. Ltd.—429a /GG  
Coln River Concrete Units, Ltd.—  
615 /EG  
Cotswold Dale Stone Co. Ltd.—2 A/G  
Eastwoods, Ltd.—154 G/G  
Ellis, John, & Sons, Ltd.—284 O/N  
Marley Tile Co. Ltd.—181, 182 G/G,  
203, 204 J/G  
Noelite, Ltd.—180 H/G

#### ●Pipes and Conduits, Gas, Water Electricity

Cobb, K. L., Ltd.—425 /GG  
Copper Development Association.—  
307 Q/N  
Crane, Ltd.—267 N/N  
Dohm, Ltd.—240 L/G  
Econa Modern Products, Ltd.—24, 25  
B/G  
Farmiloe, T. & W. Ltd.—329 R/N  
Finch, B. & Co., Ltd.—12, 13, 14 A/G  
Harvey, G. A., & Co. (London), Ltd.—  
150, 151 G/G  
Imperial Chemical Industries, Ltd.—  
86, 87 D/G  
Key Engineering Co. Ltd.—292 P/N  
Leeds Fireclay Co. Ltd.—177 H/G,  
200 J/G  
Marley Tile Co., Ltd.—181, 182 G/G,  
203, 204 J/G  
Shires & Co. (London) Ltd.—277 N/N  
Stewarts & Lloyds, Ltd.—324 R/N  
Warrington Tube Co. Ltd.—77 D/G  
Yorkshire Copper Works, Ltd.—  
146 G/G

#### ●Pipes, Drain and Sewage

Eastwoods, Ltd.—154 G/G  
Econa Modern Products, Ltd.—24,  
25 B/G  
Federated Foundries, Ltd.—501 /NG  
Key Engineering Co., Ltd.—292 P/N  
Vitreflow, Ltd.—337 S/N

#### ●Plaster, Plastering and Finishing

British Plaster Board (Manufacturing),  
Ltd.—94 E/G, 626, 627 /EG,  
650 /EG

Caffera & Co., Ltd.—38 B/G  
Gocham Co., Ltd.—287 O/N  
Gyproc Products, Ltd.—149 G/G  
Gypsum Mines, Ltd.—335, 336 S/N  
Pyrok, Ltd.—80 D/G

#### ●Plasterboards and Walling

Bellrock Gypsum Industries, Ltd.—  
229 K/G  
British Plaster Board (Manufacturing),  
Ltd.—94 E/G, 626, 627 /EG,  
650 /EG  
Gyproc Products Ltd.—149 G/G

#### ●Plug and Wall Fixings

Philplug Products, Ltd.—225 K/G  
Rawplug Co. Ltd.—242 L/G

#### ●Plumbing and Plumbers Brass- foundry

Associated Brassfounders, Birming-  
ham, Ltd.—553 /NG  
Barking Brassware Co. Ltd.—427 /GG  
Bourner, F. H., & Co. (Engineers),  
Ltd.—548, 550 /NG  
Bridges, S. N., & Co. Ltd.—316, 317  
Q/N  
British Lead Mills, Ltd.—504 /NG  
Cobb, K. L., Ltd.—425 /GG  
Conex-Terna, Ltd.—75 D/G  
Copper Development Association.—  
307 Q/N

Crane, Ltd.—267 N/N  
Econa Modern Products, Ltd.—24,  
25 B/G  
Farmiloe, T. & W., Ltd.—329 R/N  
Federated Foundries, Ltd.—501 /NG  
Froy, W. N., & Sons, Ltd.—304, 305  
Q/N

Greenwood & Hughes, Ltd.—193,  
194 J/G  
Ideal Boilers & Radiators, Ltd.—  
310 Q/N  
Imperial Chemical Industries, Ltd.—  
86, 87 D/G

Kings Langley Engineering Co. Ltd.—  
410 /GG  
Lead Sheet & Pipe Council.—109 H/G  
Paglers, Ltd.—102 E/G  
Purimachos, Ltd.—503 /NG

Rowe Brothers & Co., Ltd.—485 /GG  
Sanbra, Ltd.—75 D/G  
Shanks & Co. Ltd.—39 B/G  
Shires & Co. (London) Ltd.—277 N/N  
Stewarts & Lloyds, Ltd.—324 R/N  
Yorkshire Copper Works, Ltd.—146  
G/G

●Portable Buildings, Site Huts,  
Etc.

A.B.C.D., (Raynes Park), Ltd.—274,  
275 N/N  
Clifton, I., & Sons, Ltd.—614 /EG  
Macka Structures (Birmingham), Ltd.—  
623, 633 /EG  
M.E. Engineering, Ltd.—43 C/G  
Scaffolding (Great Britain), Ltd.—  
127 F/G, 166 N/G, 444 /GG  
Smith, John & Co. (London), Ltd.—  
83 C/G  
Terrapin, Ltd.—417 /EG

#### ●Prefabricated Systems, Components, Cladding, Units, etc.

Bellrock Gypsum Industries Ltd.—  
229 K/G  
Braby, Fredk., & Co., Ltd.—185 H/G,  
200 J/G  
British Aluminium Co., Ltd.—273 N/N  
British Plaster Board (Manufacturing),  
Ltd.—94 E/G, 626, 627 /EG,  
650 /EG  
Cape Asbestos Co., Ltd.—42 C/G  
Cascolloid—540 /NG  
Celcon, Ltd.—445 /EG  
Compactom, Ltd.—60 C/G  
Concrete, Ltd.—31 B/G  
Cotswold Dale Stone Co. Ltd.—2 A/G  
Crittall Manufacturing Co. Ltd.—  
98 E/G  
Ellis, John, & Sons, Ltd.—284 O/N  
Finlock Gutters, Ltd.—354 T/N

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Bellrock Gypsum Industries Ltd.—  
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Cascolloid—540 /NG  
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Cotswold Dale Stone Co. Ltd.—2 A/G  
Crittall Manufacturing Co. Ltd.—  
98 E/G  
Ellis, John, & Sons, Ltd.—284 O/N  
Finlock Gutters, Ltd.—354 T/N

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229 K/G

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229 K/G

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Bellrock Gypsum Industries Ltd.—  
229 K/G

Greenwood, George, & Sons.—434  
/GG

Gyproc Products, Ltd.—149 G/G  
Holoplast, Ltd.—610 /EG  
Hope, Henry & Sons, Ltd.—90, 91 D/G  
Imperial Chemical Industries, Ltd.—  
86, 87 D/G

Milson's Patent Precast (Vermiculite)  
Cladding—41 C/G  
Northern Aluminium Co. Ltd.—639  
/EG

Pierhead, Ltd.—647, 648 /EG  
Pilkington Brothers, Ltd.—123 F/G  
Quickhite (1928) Ltd.—612 /EG  
Ronald, S. W., & Co. (London), Ltd.—  
423 /GG

Rowe Brothers, & Co., Ltd.—485 /GG  
Shearwater, Ltd.—621 /EG  
Shockcrete Products Ltd.—613 /EG  
Stramit Boards, Ltd.—237, 238 L/G  
Trodek, Ltd.—610, 611 /EG

Turners Asbestos Cement Co. Ltd.—  
53, 54 C/G  
Universal Asbestos Manufacturing Co.  
Ltd.—283 O/N

Williams, John & Sons (Cardiff), Ltd.—  
281 O/N  
Williams & Williams, Ltd.—83 D/G

#### ●Prefabricated Systems, Factories and Warehouses

Bellrock Gypsum Industries, Ltd.—  
229 K/G  
Brockhouse Steel Structures, Ltd.—  
624, 625 /EG

Ellis, John & Sons, Ltd.—284 O/N  
Finch, B., & Co., Ltd.—12, 13, 14, H/G  
Gardiner, Sons, & Co. Ltd.—89 /DG  
Hawksley S. M. D., Ltd.—619 /EG  
Marley Tile Co. Ltd.—181, 182 G/G,  
203, 204 J/G

Metal Sections, Ltd.—147 G/G  
Scaffolding (Great Britain), Ltd.—  
127 F/G, 166 H/G, 444 /GG  
Sommerfelds, Ltd.—113 E/G  
Timber Development Association.—  
299 P/N

Tubwrights, Ltd.—542, 544 /NG  
Udalls Prestressed Concrete Ltd.—  
634, 635 /EG  
United Merchants, Ltd.—125, 126 F/G

#### ●Prefabricated Systems, Schools, Offices and Garages

A.B.C.D., (Raynes Park), Ltd.—274,  
275 N/N  
Brockhouse Steel Structures, Ltd.—  
624, 625 /EG

Coln River Concrete Units, Ltd.—  
615 /EG  
Gardiner, Sons & Co., Ltd.—89 /DG  
Hawksley, S. M. D., Ltd.—619 /EG  
Marley Tile Co. Ltd.—181, 182 G/G,  
203, 204 J/G

Selleck, Nicholls & Co. Ltd.—629,  
630 /EG  
Terrapin, Ltd.—417 /EG  
Timber Development Association.—  
299 P/N

Tubwrights, Ltd.—542, 544 /NG  
United Merchants, Ltd.—125, 126 F/G  
"W" Prefabricated Concrete Build-  
ings, Ltd.—654, 655 /EG

#### ●Prestressed Equipment

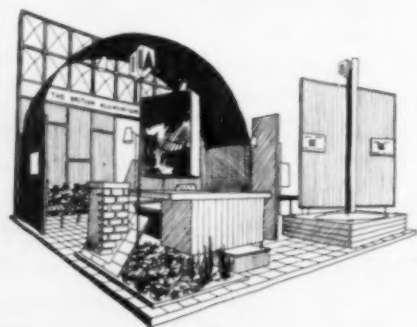
Cornelly Equipment Co.—510 /NG  
P.S.C. Equipment, Ltd.—604 /EG  
Udalls Prestressed Concrete Ltd.—  
634, 635 /EG

#### ●Pumps and Pumping Plant

Beresford, James, & Son, Ltd.—303  
Q/N  
Goodenough Pumps, Ltd.—321, 322  
R/N

Johnson, C. H. (Machinery), Ltd.—  
162, 163 /GG

**British  
Aluminium  
Co. Ltd.  
by:  
Ronald  
Dickens**





PILKINGTON'S **"ARMOURPLATE" Glass Doors**  
*make the most inviting entrances*

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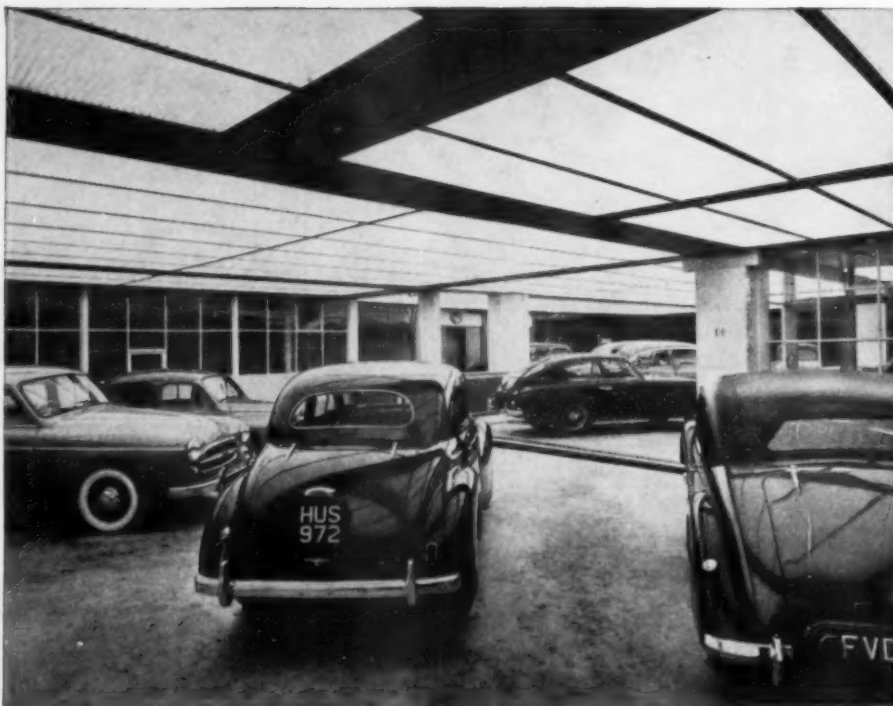


See-

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Garage with conventional lighting. Note the confusion of beams, pipes, trunking, wiring and light fittings.

The same garage after modernising with a LUMENATED CEILING.



Write for your copy of "LUMENATED CEILINGS", an illustrated brochure giving full details of this new lighting technique.

When modernising old premises or building new ones, you can make lighting an integral part of design by installing a LUMENATED CEILING, a new lighting technique combining light source and ceiling in one. The whole interior of shops, offices and show-rooms is diffused with a pleasant, efficient light of uniform intensity without shadow, glare or 'high spots'. The LUMENATED CEILING overcomes many design problems

by effectively screening overhead pipe work, ventilation trunking and other unsightly projections.

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The surface of the LUMENATED CEILING is a durable, finely corrugated plastic material, specially treated to repel dust. It is non-inflammable, can be easily cleaned and kept in perfect condition with the minimum of attention.

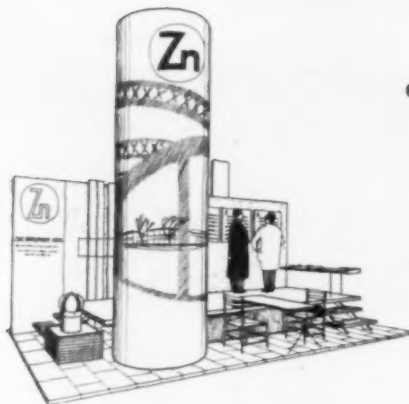
# LUMENATED CEILINGS LIMITED

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## CLASSIFIED LIST

**Zinc  
Development  
Association  
by:  
James Cubitt  
and Partners**

Lister, R. A., & Co. Ltd.—172, 173 H/G  
212, 213 J/G  
M.E. Engineering Ltd.—62 C/G  
Millars Machinery Co. Ltd.—258, 259  
M/N  
Pegson Ltd.—59 C/G  
Warsop Power Tools Ltd.—222 K/G  
Wickham Engineering Co. Ltd.—  
160, 161 G/G

### ●Rainwater Goods

Braby, Fredk. & Co. Ltd.—185 H/G,  
200 J/G  
Federated Foundries, Ltd.—501 NG  
Finlock Gutters, Ltd.—354 T/N  
Harvey, G. A., & Co. (London), Ltd.—  
150, 151 G/G  
Holloway Metal Roofs, Ltd.—462 G/G  
Imperial Chemical Industries, Ltd.—  
86, 87 D/G  
Nuralite Sales, Ltd.—230 K/G  
Turners Asbestos Cement Co. Ltd.—  
53, 54 C/G  
Vitrelex, Ltd.—337 S/N

### ●Refrigeration Equipment

Brentford Electric, Ltd.—344 S/N  
Electrolux, Ltd.—323 R/N  
Ferranti, Ltd.—416 J/G  
Gardiner, Sons & Co. Ltd.—89 D/G

### ●Reinforced and Prestressed Concrete Manufacturers

Concrete, Ltd.—31 B/G  
Johnson's Reinforced Concrete En-  
gineering Co. Ltd.—45 C/G  
Penfold Fencing & Engineering Ltd.—  
30 B/G  
Pierhead Ltd.—647, 648 EG  
Shoekrete Products Ltd.—613 EG  
Tee Beam Structures (Britain), Ltd.—  
644 EG  
Udalls Prestressed Concrete, Ltd.—  
634, 635 EG

### ●Reinforcement Fabrics, Rods, etc.

Expanded Metal Co. Ltd.—95, 96 E/G  
Johnson's Reinforced Concrete En-  
gineering Co. Ltd.—45 C/G  
Scaffolding (Great Britain), Ltd.—  
127 F/G, 166 H/G, 444 G/G

### ●Roofs, Aluminium

Anderson, D., & Son, Ltd.—129 F/G  
Briggs, William, & Sons, Ltd.—32, 33  
B/G  
British Aluminium Co. Ltd.—273 N/N  
Imperial Chemical Industries Ltd.—86,  
87 D/G  
Northern Aluminium Co. Ltd.—639  
EG  
Ronald S. W., & Co. (London), Ltd.—  
423 G/G  
Ruberoil Co. Ltd.—308, 309 Q/N

### ●Roofs, Asbestos

Cape Asbestos Co. Ltd.—42 C/G  
Durasteel, Ltd.—346, 347 T/N  
Eastwoods, Ltd.—154 G/G  
Turners Asbestos Cement Co. Ltd.—  
53, 54 C/G  
Universal Asbestos Manufacturing Co.  
Ltd.—283 O/N

### ●Roofs, Copper and Zinc

Braby, Fredk. & Co. Ltd.—185 H/G,  
200 J/G  
Copper Development Association—  
307 Q/N

Harvey, G. A., & Co. (London) Ltd.—  
150, 151 G/G  
Holloway Metal Roofs, Ltd.—462 G/G  
Imperial Chemical Industries Ltd.—  
86, 87 D/G

### ●Roofs, Hardboard

British Plumber, Ltd.—178 H/G, 207  
J/G  
Celotex, Ltd.—55 C/G

### ●Roofs, Tile

Colthurst, Symons & Co. Ltd.—84 D/G  
Cornelly Equipment Co.—310 NG  
Cotswold Dale Stone Co. Ltd.—2 A/G  
Downing, G. H., & Co. Ltd.—152,  
153 G/G  
Eastwoods, Ltd.—154 G/G  
Langley, London, Ltd.—132 F/G  
Maidenhead Brick & Tile Co. Ltd.—  
158 G/G  
Marley Tile Co. Ltd.—181, 182 G/G,  
203, 204 J/G  
National Federation of Clay Industries  
—88 D/G  
Redland Tiles, Ltd.—99 E/G  
South Eastern Brick & Tile Federation.  
92 E/G  
Sussex & Dorking United Brick  
Companies, Ltd.—270 N/N

### ●Roofs, Wood

Colt, W. H. (London), Ltd.—231 K/G  
Newsom, H., Sons & Co., Ltd.—  
610, 611 EG  
Sharp Bros. & Knight, Ltd.—293 P/N  
Trofidek, Ltd.—610, 611 EG

### ●Roofs, Other Special Materials

Anderson, D., & Son, Ltd.—129 F/G  
Ashdowns, Ltd.—488, 490 G/G  
Briggs, William, & Sons, Ltd.—32,  
33 B/G  
Greenwood, George & Sons—434 G/G  
Holoplast, Ltd.—610 EG  
Imperial Chemical Industries, Ltd.—  
86, 87 D/G  
Limmer & Trinidad Lake Asphalt Co.,  
Ltd.—128 F/G  
Nuralite Sales, Ltd.—230 K/G  
Ruberoil Co. Ltd.—308, 309 Q/N  
Shearwater, Ltd.—621 EG

### ●Rooflights

Ashdowns, Ltd.—488, 490 G/G  
Braby, Fredk., & Co., Ltd.—185 H/G,  
200 J/G  
Cascelloid—540 NG  
Corroglaze, Ltd.—603 EG  
Durasteel, Ltd.—346, 347 T/N  
Ide, T. & W., Ltd.—232 K/G  
Imperial Chemical Industries, Ltd.—  
86, 87 D/G  
King, J. A., & Co., Ltd.—134 F/G  
Quicktho (1928), Ltd.—612 EG  
Williams & Williams, Ltd.—63 D/G

### ●Sand and Aggregates

Eastwoods, Ltd.—154 G/G  
Elder Reed, A. & Co., Ltd.—157 G/G  
Foamed Slag Producers Federation,  
Ltd.—456 G/G

### ●Sanitary Fittings and Appliances

Adamser, Ltd.—180 H/G, 205 J/G  
Cobb, K. L., Ltd.—425 G/G  
Federated Foundries, Ltd.—501 NG  
Fray, W. N., & Sons, Ltd.—304, 305  
Q/N

Ideal Boilers & Radiators, Ltd.—  
310 Q/N  
Leeds Fireclay Co., Ltd.—177 H/G,  
208 J/G  
Shanks & Co., Ltd.—39 B/G

### ●Saws, Power and Hand

Bridges, S. N., & Co., Ltd.—316,  
317 Q/N  
Cole, E. R., Ltd.—435 G/G  
Dararm, J. Clubley Armstrong, Ltd.—  
559 NG  
Mercator Trading Co., Ltd.—631 EG  
Teles Smith, Ltd.—378 X/E  
Whitehill Spindle Tools, Ltd.—397  
Z/E

### ●Scaffolding Appliances

Acrow (Engineers), Ltd.—107, 108  
E/G, 426 G/G, 506 N/Q  
British Building & Engineering Ap-  
pliances, Ltd.—164, 165 G/G  
Kwikform, Ltd.—119, 120 F/G  
London & Midland Steel Scaffolding  
Co.—159 G/G  
Mills Scaffold Co., Ltd.—121, 122 F/G  
Palmer's Travelling Cradle & Scaffold  
Co., Ltd.—174, H.G. 211 J/G  
Roberts, David, & Co. (Engineers),  
Ltd.—170 H/G, 215 K/G  
Scaffolding (Great Britain), Ltd.—  
127 F/G, 166 H/G, 444 G/G  
Steel Scaffolding Co., Ltd.—76, 77 D/G  
Stephens & Carter, Ltd.—326 R/N  
Stewarts & Lloyds, Ltd.—324 R/N

### ●Sherradising, Plating and Galvanizing

Anderson, D., & Son, Ltd.—129 F/G  
Munster Developments Co. (Fulham),  
Ltd.—555 NG  
Sankar, J. H., & Son, Ltd.—500, 502  
NG  
Secomastic, Ltd.—142 G/G  
Tin Research Institute—456 G/G  
Williams, John, & Sons (Cardiff), Ltd.—  
281 O/N  
Zinc Alloy Rust Proofing Co., Ltd.—  
348 T/N  
Zinc Development Association—82  
D/G

### ●Stair and Stair Treads

Adamite Co., Ltd.—565 NG  
Expanded Metal Co., Ltd.—95, 96 E/G  
Ferodo, Ltd.—50 C/G  
Safety Tread, Ltd.—428 G/G  
Austin of East Ham, Ltd.—484, 486  
GG  
Boulton & Paul, Ltd.—314, 315 Q/N  
Loft Ladders, Ltd.—495 G/G  
Sharp Bros. & Knight, Ltd.—293 P/N

### ●Stone Reconstructed and Cleaning

Banks, W. P., Ltd.—429 G/G  
Callow & Kippich, Ltd.—37 B/G  
Cotswold Dale Stone Co., Ltd.—2 A/G  
Ellis, John & Sons, Ltd.—284 O/N  
Selleck, Nicholls & Co., Ltd.—629,  
630 EG  
True-Crete, Ltd.—11 A/G

### ●Stonemasons' Tools

Atlas Diesel Co., Ltd.—390 Y/E  
Impregnated Diamond Products, Ltd.—  
—377 X/E  
Perkins, John M., & Smith, Ltd.—  
399 Z/E  
Van Moppes, L. M., & Sons (Diamond  
Tools), Ltd.—443 G/G

### ●Structural Steelwork

Braby, Fredk. & Co., Ltd.—185 H/G,  
200 J/G  
Gardiner, Sons & Co. Ltd.—89 D/G  
Sommerfelds, Ltd.—113 E/G  
United Steel Structural Co. Ltd.—  
331 S/N

### ●Switchgear and Switches

British Electrical Development Asso-  
ciation—183, 184 E/G  
Canille Switches, Ltd.—487 G/G

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202 J/G  
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203, 204 J/G  
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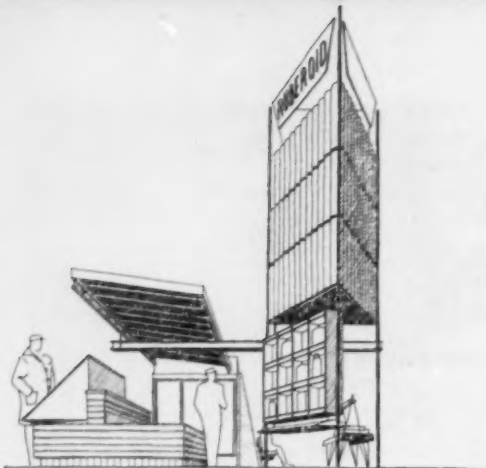
Cunningham, G. W.—666 EG  
Deaves, R. J.—415 G/G, 561 NG  
Kane, Douglas, Associates—518a NG  
Lawler, Ayers & Co., Ltd.—279 O/N  
Rawplug Co., Ltd.—242 L/G  
Shaw, A., & Son (Diamonds), Ltd.—  
459 G/G  
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Skarston Manufacturing Co., Ltd.—  
429 G/G  
Youngman, W. C., Ltd.—176 H/G,  
209 J/G

### ●Tools, Power

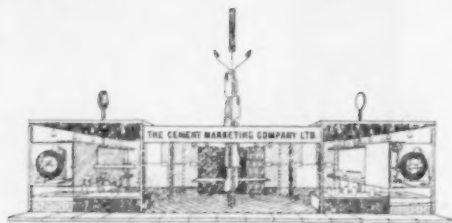
Adam & Harvey (Rapid Hammer), Ltd.,  
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Bridges, S. N., & Co., Ltd.—316, 317  
Q/N  
British Equipment Co., Ltd.—175 H/G,  
210 J/G  
Cole, E. R., Ltd.—435 G/G  
Columbus Dixon Organisation—105  
E/G  
Consolidated Pneumatic Tool Co., Ltd.  
—219 K/G  
Flexitol Engineering Co. Ltd.—35 B/G  
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H/G, 296 J/G  
Kennedy, W., Ltd.—233 K/G  
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NG  
Machinery (Continental), Ltd.—118  
F/G  
Pegson, Ltd.—59 C/G  
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Van Moppes, L. M., & Sons (Diamond  
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212, 213 J/G  
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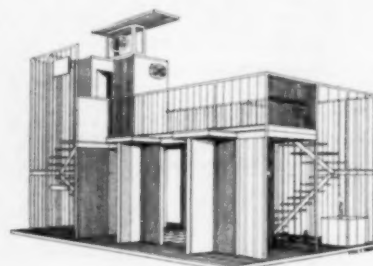
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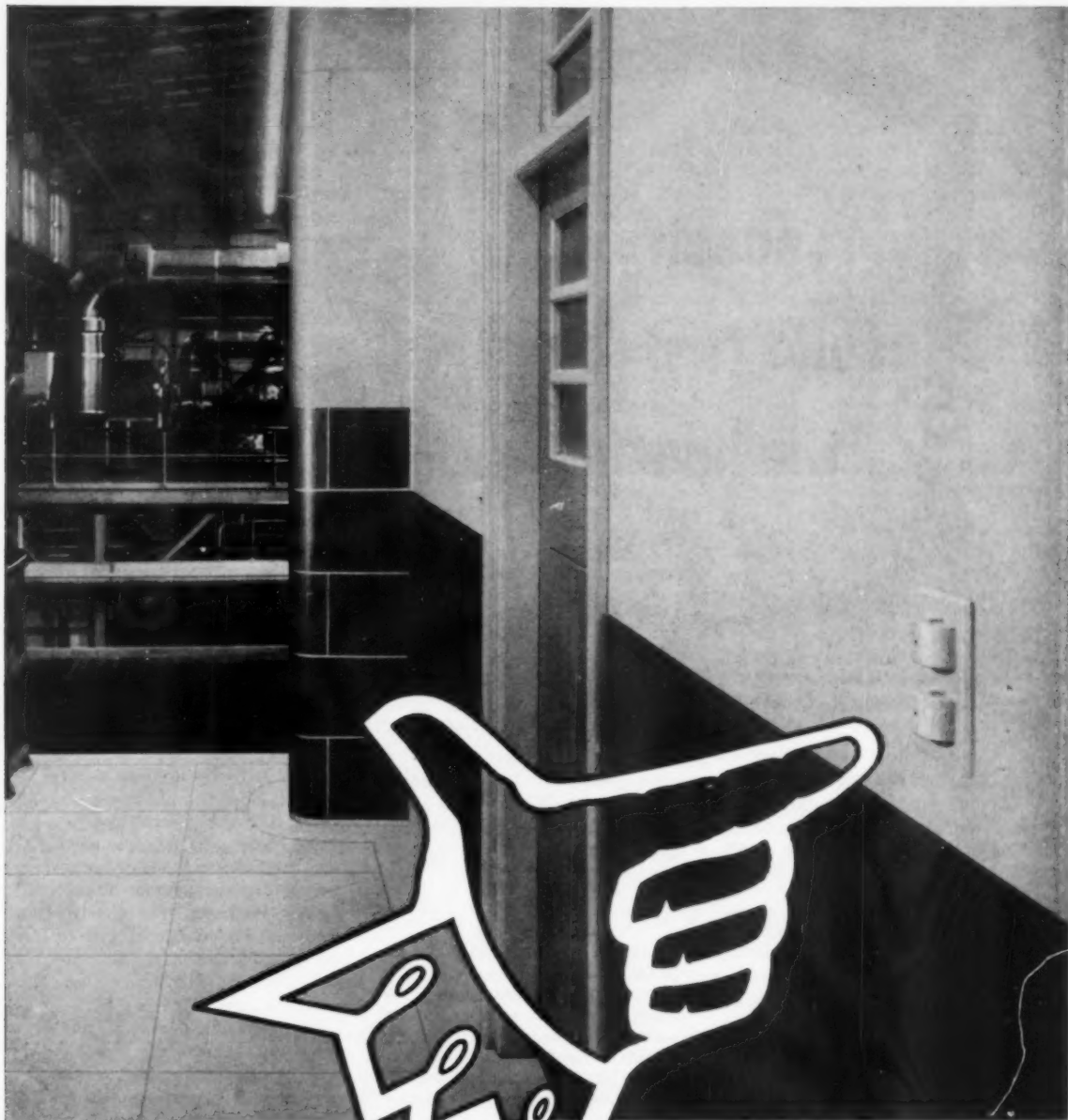
British Equipment Co. Ltd.—175 H/G, 210 J/G  
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Liner Concrete Machinery Co., Ltd.—271 N/N  
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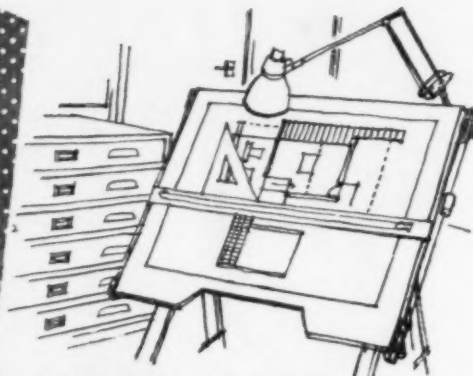
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## B.S. Handbook No. 3 — Building

THE completely new version of this well-known handbook was launched at a Press Conference on November 4th and what a monumental volume it has now become? It is quarto size with pages, I am thankful to say, agreeing with the B.S.I.'s own recommendations for page sizes of publications in B.S.1311, at least 3in thick and my guess is that it weighs about 7lb. This vast size and weight has come about as B.S.I. has at last listened to the constant requests that its Building Handbook should be in loose-leaf form. It is a comment that has been made in many quarters and the subject has been mentioned previously in these columns.

B.S.I. agreed that the loose-leaf form had advantages and that efforts to issue previous editions in this form had been made but on investigation difficulties had been found in the obtaining of a binder of a suitable type to withstand long and heavy usage at a reasonable price and to organize a workable method of keeping the book up-to-date at not too great an expense to the user. The extra cost involved in presenting the volume in loose-leaf form was also thought to be a deterrent. In fact the new form has had the effect of doubling the initial selling price of the Handbook so that it is now £3 10s 0d, post free.

The larger size of page has the advantage that much more information can be put on it thus not only simplifying reference but also reducing the number of pages necessary in the total book. It was said that to have retained the old B.S. publication size of page would have required the handbook to be in two volumes, involving two expensive binders.

The volume has not only changed its size and form but the cover has changed in colour from the blue used for most editions to a dark red, but not as dark as that of the penultimate edition issued in 1950. The handbook is much more pleasing in its layout and general appearance than the previous editions and the rather narrow column width makes for easier reading, as it is set with two columns to the page.

An important point in adopting the loose-leaf form is that in the long run it should be much cheaper to the user as it eliminates the need to buy a new edition every two or three years, in order to keep the information up-to-date. In addition, and perhaps even more important, is that

the addendum booklets, which were issued once or twice between each new edition, will no longer be necessary as revision pages can be inserted in the volume itself. In point of fact these addendum booklets were very difficult, if not impossible, to read in conjunction with the published book. The binder has provided space for summaries of new standards to be inserted as they become available and of course the loose-leaf arrangement permits of amendment pages to be inserted and the replaced pages to be scrapped.

As to the method of handling the additions and changes, B.S.I. intends to issue packets of new sheets periodically, probably at six monthly intervals. New sheets will not be issued as each new or revised B.S. becomes available in order to keep the cost to the purchaser as low as possible as the expense of packing, postage and overheads of circulating single sheets would be extremely high. The B.S.I. say that the availability of these packets of addenda sheets will be announced in its own Monthly Information Sheets, through the Technical Press and also directly to those purchasers of the handbook who record their names with B.S.I. who are introducing a scheme to record the names of purchasers if they wish to be kept informed of changes. Inserted at the beginning of the new volume is a card which merely has to be sent to B.S.I. for the use of those wishing to be kept informed.

The arrangement of the summaries in the new edition has been changed. It was said that to meet some earlier criticisms the last edition of the handbook had its summaries assembled in groups of standards for like or associated products but experience has indicated that the sub-divisions adopted while suiting many users did not fit in with the method of reference of a large number of other users, and in addition complaints were received that it was only possible to find the summary of a particular British Standard whose number was known by reference to the index. In the light of these criticisms, therefore, the new edition is distributed with the summaries arranged in the numerical order of the British Standards but as they are in loose-leaf form those users who would like to have the summaries arranged according to some particular method of their own can rearrange them in any order to suit their own system.

The contents of summaries of the

handbook have been corrected to the 1st September, 1955. The handbook contains summaries of 273 British Standards the selection of which is primarily related to housing but in fact the Standards summarized represent those applicable to the great bulk of general building. There have been a few deletions since the previous edition but as a number of new Standards have been added the total covered has in fact been increased by five. It is interesting to learn that the cost of the individual British Standards covered by these summaries would amount to more than £68 if purchased in the normal way so that the cost of the handbook does not seem unreasonable.

As in previous editions the summaries are intended to give the information generally required for reference purposes by architects, builders, foremen, and clerks of works. The form in which it is presented is intended to provide a quick reference to the contents of the Standards and, as before, does not include the details of methods of test, as a very large number of those who refer to British Standards are not in a position to carry out tests other than dimensional checking and consequently do not need the information. Those able to carry out testing must, of course, refer to the actual British Standards themselves.

As in the previous edition, British Standards are again not included for materials and components used in work normally covered by specialised contractors, such as electrical and gas installations.

In spite of the price of this new edition users are likely to find it much more valuable than the previous editions and as time goes by they are likely to benefit greatly from the change of form. A number of the summaries are not greatly changed from the previous editions but B.S.I. say that as new revisions of the standards are prepared efforts will be made to improve the consistency of presentation of the requirements of the Standards to improve still further their general appearance and to facilitate reference. Care has already been taken because of the thickness of the volume to keep the B.S. numbers and the titles towards the outside edge of the page where they are easily and quickly found. This handbook has become an almost essential piece of equipment for all offices connected with building.

**D. U.**

## **Housing in Denmark and Sweden**

**A** TITLE to a paper can be misleading. This was to a certain extent the case in connection with the address by Mr. Norman Graham, Assistant Secretary, and Mr. Robert Woodcock, Deputy Chief Architect, Department of Health for Scotland. The title of their joint paper, delivered to the Scottish National Housing and Town Planning Council at their annual meeting at Rothesay, was "Housing in Denmark and Sweden". Do not misunderstand me. They did speak, and spoke well, on housing in these two countries but they very cleverly turned the paper from being a mere talk on how well those countries design their housing estates as compared with this country, to suggesting we had become too complacent in our approach to housing. They rightly suggested that it might be advantageous if local authorities took stock and looked critically at their housing policy which they have been following for the last ten years, and reviewed the basic assumptions upon which this policy was based. No one could disagree with this suggestion, but how many authorities will take the hint? The general impression one got after this paper was that each authority considered it was a very good paper for its neighbour but it was doing very well indeed. Last month, for example, they had, despite all the difficulties, completed 102 houses. The paper was, in their view, not meant for them.

This was one of the fundamental points of the paper. We have in this country laid too much emphasis on the number per month or year and in so doing have neglected other aspects of housing. Might I suggest that whether or not you were at Rothesay this paper contained points which all, councillors, officials and architects, could with advantage consider.

The speakers emphasised that it was in the general approach to housing that the most marked difference could be noticed. Whilst there was the same sense of urgency and house building proceeded at a very high rate, particularly in Sweden, despite building conditions in Winter worse than ours, a great deal of time was devoted to the preparatory and planning stages of new development, and in particular to the layout and design of the housing estates.

The Scandinavians says that this is time well spent. No architect would disagree with this statement but would, I have no doubt, ask what he

should do with a council who are for ever pressing for more speed in commencement. The Scandinavians have the answer. The time, they maintain, spent on this preparatory stage actually contributes to the ultimate rate of progress because it is used, amongst other things, to reduce building time to the minimum.

We were informed that the total time spent from the beginning of the preparatory stage to the final completion of the last house is no longer and indeed may be shorter than it is here. But here is the point which cannot be too strongly emphasised. At least half of the time from beginning to completion is devoted to consideration of the preparation of the layout and the house plans before work begins on the site at all; then they carry through the construction of the actual buildings from start to finish in a time relatively short by comparison with ours. Much time and effort is devoted to discussion and consultations between the technical officers concerned to drawings, models and enquiries about materials, etc.

I can hear you say that we in this country have not time for all this pre-planning. The Scandinavians take less time than we do to build but to allow for this pre-planning they begin earlier so that the available time is not curtailed by the date at which building operations ought to start. I am afraid we in this country are haphazard in our methods.

The reason for this difference of approach is that they attach greater importance to the siting, layout and environment of the houses than is normal in this country. As these two gentlemen delivering the paper were civil servants they had to be circumspect in their criticism, particularly as the majority of their audience were councillors and officials, and therefore they limited their criticism to the following remark: "Certainly in these matters the methods used and the results obtained are very different from ours." Very tactfully put and very true.

How are these results obtained? The layouts are devised under a different system. In cities and towns the responsibility for producing the layout rests with the municipal authority and its planning staff, irrespective of who might be the developer. The provisional layout is based on a series of test studies. It is devised to a very high standard of civic design and the buildings are

fitted into the landscape with great care and detailed attention to spacing, sunlight and ultimate appearance, both from within the development and from a distance. This provisional layout is later adjusted in consultation with the developer and his architect, in so far as the house types, etc., ultimately chosen vary from the tentative assumptions which the planning staff made in order to produce the layout.

To this process much time and thought are given, with the assistance of very detailed contouring, sun machines, models, etc. The authors of the paper informed their audience that they came across one scheme for 3,000 flats where forty versions of the layout had been prepared before the final layout was reached.

The thoroughness of the preparation before building starts was obviously one of the points which had impressed the authors of this paper. They pointed out that in Denmark at least, the practice is to draw not merely the plans of blocks but plans for the building of it, with locations of cranes, dumps, site factories (for concrete work), site offices and so on. Having regard to the ultimate landscaping, the most convenient sites are chosen in advance for the dumping of excavated soil and indicated on the plans.

In addition, very detailed study is made of levels and the blocks are sited so that as far as possible any under building can be utilised, e.g., for storage, shops, garages or laundry facilities.

One often wonders if one of the reasons for many architects considering Scandinavian architecture ahead of ours is that it is different in certain respects. For instance, the speakers pointed out that their road system is very different. Our corridor street with pavements, front gardens and houses on both sides is now unknown. There are no drying greens. They design without a deliberate front and back. They put all pipework of the plumbing inside. Generally, apart from a few roads of our pattern, access to the blocks is by access ways, perhaps 12ft wide—without kerbs or pavements and drained on one side only—and then by wide gravel footpaths. There is nothing to suggest that these are inadequate. In comparison with this country there may be less delivery traffic of groceries, milk, etc.; with central heating coal does not have to be brought and ashes taken away; but there are

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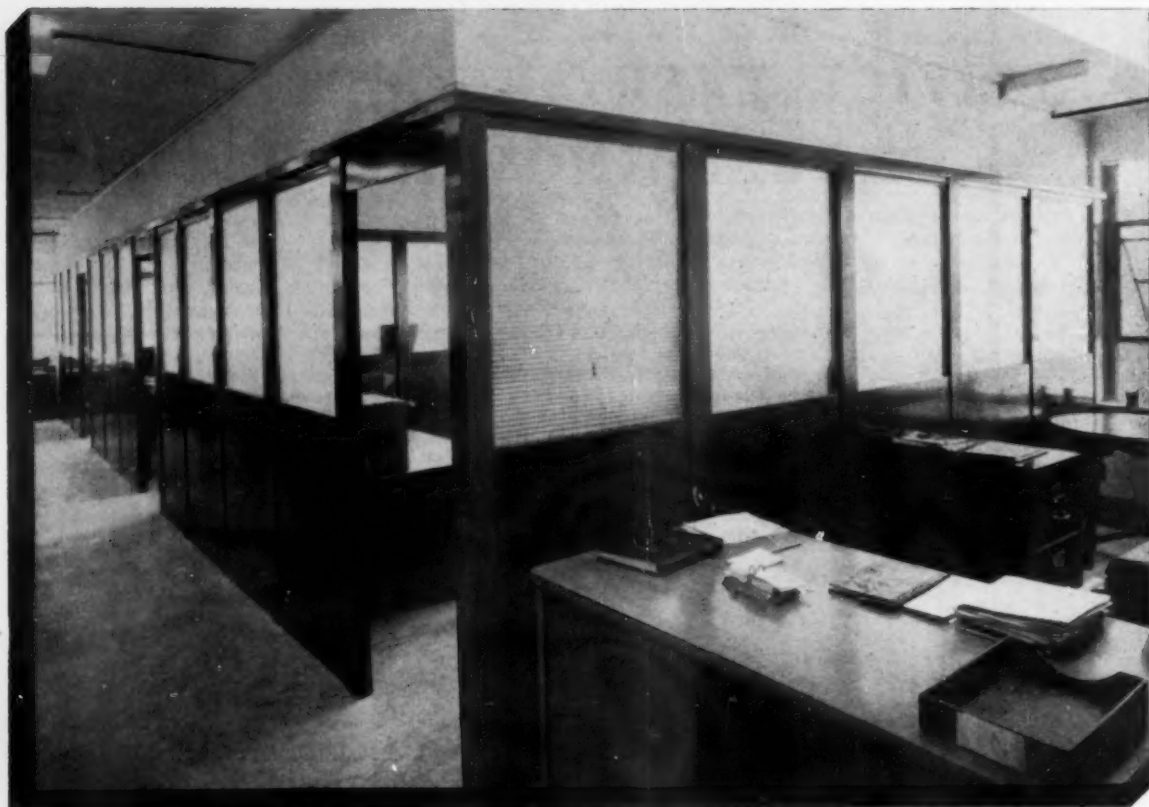
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## Housing in Denmark and Sweden

relatively more—in Sweden many more—private cars, owned by tenants and garaged within the scheme, and the parks for visiting cars demand steadily increasing space; in Sweden, indeed, garage accommodation for one car is now provided for every four houses.

On this question of roads one speaker in the debate which followed the paper emphasised that we spent far too much on roads within our schemes and in some cases 6s. a week had to be added to the rent of one house because of the cost of the road-works.

Emphasis was also made to the fact that all members of the community in Scandinavia were civic conscious, were proud of their surrounds and what was more important saw that they were not abused. This is far from being the case in some areas in this country.

Both speakers emphasised the importance placed on teamwork and how variety in design was obtained.

There is a remarkable degree of technical collaboration. A big scheme, in Denmark, may be the joint product of the municipal architects, on layout, and the official architects of the several house-building societies developing the site, each of these architects working with a consultant architect responsible for the design and construction of the society's blocks of houses.

This degree of collaboration is essential in these countries, if only because the house-building agencies are more heterogeneous than ours. In neither Denmark nor Sweden does the local authority build houses directly. It may operate through one or more house-building societies in which it has the controlling or virtually the sole financial interest. There are also the co-operative house-building societies, the owner-controlled non-profit-making societies, and private contractors building to the State requirements and with State assistance, singly or in a group.

The number and diversity of the agencies involved themselves produce variety in the housing designs. Moreover, each house-building agency regularly puts out a considerable proportion of its work, sometimes all of it, to consultant architects. It may hold an architectural competition. Sometimes this may be an "idea competition" only, to enlist the brilliant architect who lacks the experience or resources to carry a

large scheme through to execution. This willingness to seek the best may be seen in another way. It is quite common for a municipal authority to hold a competition for the planning and layout of a whole new district. There is no question of regarding such jobs as the sole province of the full-time officials whether those of the municipality or the house-building agency.

The whole emphasis in this paper was that we should take stock. As one speaker mentioned, we have become too easily satisfied with numbers completed, poor design and workmanship. Now is the time to look critically and objectively at what we have done. Since the war we have spent eight million pounds on housing. Have we made the best use of this money? Could we have done better? Let us hope the time may not be too far distant when Scandinavians will come to inspect our architecture instead of the reverse.

M. E. TAYLOR, A.R.I.B.A.

## R.I.B.A. Standard form of Building Contract

The Joint Contracts Tribunal gives notice of a general revision of the R.I.B.A. Standard Form of Building Contract.

Architects, surveyors, solicitors, builders and specialists, and all others concerned with building contracts, whether corporations, associations, or individuals, are invited to submit observations upon the working of the R.I.B.A. Standard Form of Building Contract and suggestions for its improvement.

Such observations and suggestions should be directed to matters of principle and expressed in general terms, but so far as possible reference should be made to the clause or clauses in the form of contract to which they relate.

The Tribunal proposes to commence this general review early in the New Year, and those interested should send in their observations and suggestions by February 29, 1956, to: The Joint Secretaries, The Joint Contracts Tribunal, 66, Portland Place, London, W.1.

The bodies represented on the Joint Contracts Tribunal are:

The Royal Institute of British Architects, The National Federation of Building Trades Employers, The Royal Institution of Chartered Surveyors, The Association of Municipal Corporations, The County Councils' Association, The London County Council, The Urban District Councils' Association, The Rural District Councils' Association.

## B.S.I. New Appointments

New Chairman of the General Council of the British Standards Institution is Sir Herbert Manzoni, C.B.E., Engineer and Surveyor of the City of Birmingham since 1935. The election of Sir Herbert who has been largely responsible for the Birmingham Development Plan and many important building projects in Birmingham, was announced at the Annual General Meeting of B.S.I. held on October 25 at B.S.I.'s London headquarters. For twenty years Sir Herbert has played an important part in the development and application of standardisation techniques in the building and civil engineering industries.

At the same meeting Sir Roger Duncalfe, Chairman of British Glues and Chemicals Ltd., and well-known for his industrial and public services, was re-elected President of B.S.I. and Mr. John Ryan (Vice-Chairman of the Metal Box Co., Ltd.) was elected as Vice-President on completion of his three-year period of service as Chairman of the General Council.

Sir Stanley Rawson, Vice-Chairman of John Brown & Co., Ltd., becomes Chairman of the B.S.I. Engineering Divisional Council. He succeeds Mr. S. J. Harley (Coventry Gauge & Tool Co., Ltd.) in directing the largest individual section of B.S.I.'s work on both national and international standardisation. Sir Stanley was Government representative at a Conference on fundamental engineering standards in 1952, between Great Britain, America and Canada, and has led delegations at international meetings working for the alignment of national standards for machine tools.

## N.F.B.T.E. Public Schools Appointments Bureau

The National Federation of Building Trades Employers will act as hosts to the Annual Conference of the Public Schools Appointments Bureau which is to be held in London on Friday, January 6, 1956. The President of the N.F.B.T.E., Mr. Harvey G. Frost, O.B.E., will preside at the morning session of the conference when Mr. Laurence Holloway and Mr. D. E. Woodbine Parish, in indicating the openings the building industry offers to public school and grammar school boys who normally leave between the ages of 16 plus and 18, will give a brief general picture of the organisation of the building industry, outline the methods of entry into the industry and the ways and means of making contact with prospective employers. They will also suggest the type of youth who is likely to make a successful career in building, mentioning the personal qualities which are most desirable and the educational standards which should be reached.

## Fire and Conversions

CONVERSION of buildings has become a prominent feature in current building and this appears to have caused the Fire Protection Association to issue a small booklet as guidance on the subject, entitled "Conversion of Buildings", copies of which are available free from the Secretary. Unfortunately the booklet is somewhat too brief for the use of architects and it might have been longer with advantage as the greater part of it is very useful. It serves, as do all F.P.A. publications, as a stimulus to building owners to appreciate the importance of taking adequate precautions against fire risks.

The booklet makes very clear that the conversion of existing buildings to uses other than those for which they were originally designed frequently increases the fire hazards especially if the building had been previously used as a single family dwelling, as is so often the case. One of the points stressed is that there is a need to give special consideration to staircases and communal corridors to ensure that they will provide at least  $\frac{1}{2}$ -hour, and preferably 1-hour, fire resistance as defined by B.S.476. These classes of fire-resistance give occupants a reasonable opportunity to escape and should confine the fire until the fire brigade can tackle the source of the fire. Half-hour resistance can be achieved with normal brick walls, timber floors and lath and plaster ceilings and is adequate for housing purposes but when the buildings are to be used for purposes such as schools, nursing homes or boarding houses, where the population is relatively high and especially where many persons sleep, or are buildings in which hazardous processes are used, such as in workshops or laboratories, 1-hour resistance becomes essential. Special care needs to be taken to ensure that the correct grades of some of the newer building materials are selected to achieve the necessary resistance. In regard to staircases in the types of building having the greater risks it is important that they are adequate in width, do not have difficult changes of direction or too many winders, have adequate handrails and are well

constructed and remain in good condition. Alternative means of escape from all floors is needed and the F.P.A. booklet stresses that these should serve all storeys and lead independently to an unobstructed space in the open at ground floor level. Such spaces should not be so confined that it is difficult to get out of them quickly. The F.P.A. do not recommend external steel staircases and recommend that if they are used the windows adjacent to them should be glazed with wired glass in fixed metal frames. The F.P.A. suggest that the means of escape should be wide enough to permit escape of all occupants within  $2\frac{1}{2}$  minutes; this time appears to overlook the time needed to reach the escape and to descend say 5 or 6 storeys, which is not dependent on the width.

Emphasis is rightly laid on the possibility that ceilings of certain rooms, such as kitchens and boiler rooms, may need to be strengthened to provide the necessary 1-hour fire resistance to retard the spread of fire to upper floors.

The booklet says that in staircases and in corridors and in all living rooms or bedrooms no combustible wall or ceiling linings should be used; this appears to be a very stringent and rather unjustifiable requirement for living and bedrooms as it rules out certain decorative finishes such as some types of panelling. It also says that in other places where combustible boards are required for thermal insulation, only those complying with Class 1 of Surface Spread of Flame Test B.S.476 should be used. Where there is a cavity behind the internal linings, it is important that the cavity should be fire stopped to prevent spread of fire within it. Both sides of the lining material should present the same standard of safety.

The booklet's recommendations regarding fireplaces and hearths appear to be in line with normal byelaw minimum requirements, but in regard to furnaces with a capacity exceeding 150,000 B.Th.U.'s per hour it recommends that unless completely enclosed by insulating material so that the external surface

temperature does not exceed 150°F, they should be installed in separate compartments enclosed by solid brick or concrete walls and with ceilings and floors entirely of non-combustible material and entered only from outside.

Great attention should be paid to flues and chimneys in old buildings as often these are no longer as efficient as they should be nor are they free from insertions of combustible material such as timber. Special attention needs to be given also to old flues to be used for new central heating boilers to ensure they will be capable of resisting the high temperatures of the flue gases and if a metal flue pipe is used it should be connected direct to a brick chimney or to a flue in an external wall by the shortest possible route. It should not pass through internal walls or floors. No woodwork or other combustible materials should be placed in a position where they are likely to be subjected to a temperature above 150°F. In general a distance of nine inches is considered sufficient in the case of flue pipes but there may be conditions in which a greater distance is required. Oil burning installations should be installed in accordance with the Recommendations of the Fire Offices' Committee and British Standard 799, "Oil Burning Equipment".

The booklet very rightly calls for a thorough inspection and test of the electrical installation to be made to ensure that wiring insulation is in good condition, that the capacity of all wiring and switches is adequate for the load to be carried and that connections to all power and lighting points and switches are properly made. Insulation resistance tests are not conclusive evidence of the condition of an installation, and inspection of the wiring is essential to ensure that there are, for instance, no loose connections under floorboards. An adequate number of power points, fed by switches and wiring of adequate capacity, should be installed so that there is no need for lighting points and wiring to be used to supply power appliances.

The booklet gives very useful re-



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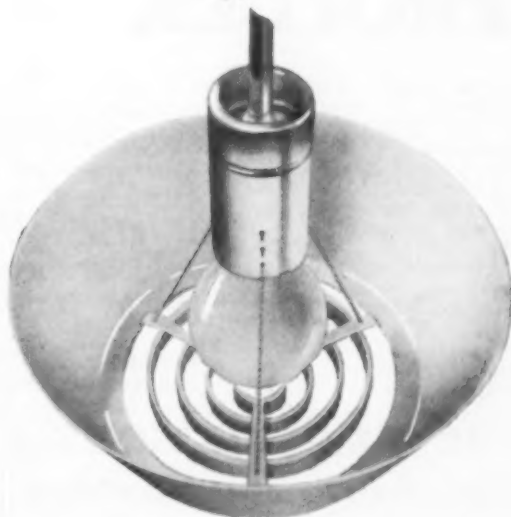
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commendations on first aid fire fighting equipment such as extinguishers, hose reels and fire alarms.

The booklet ends with some very sound advice which is often overlooked by building contractors, namely that arrangements should be made for special vigilance against fire whilst the work of alteration, repair and redecoration is in progress, and particularly where blow lamps are used. Seldom, if ever, is any fire fighting equipment provided on the jobs whether new ones nearing completion or on alterations or conversions where the value of resultant damage can be very high.

Special attention should be paid to the fire precaution requirements in building byelaws, to the recommendations of B.S.C.P. 3 Chapter IV "Precautions against fire" and to test certificates on materials it is proposed to use in relation to B.S.476. Incidentally it is long past the time when C.P.3 Chapter IV should have been revised and more especially extended to cover

all types of buildings and not only dwellings of not more than two-storeys.

Most building authorities are becoming much more cautious in regard to fire-risks in domestic types of building, both new and conversions. They may well be fully justified in many instances, depending on the type of occupancy but there seem to be examples which are difficult to justify, and there are demands from some local authorities which seem to be quite unnecessarily arduous on the building owners or occupiers. For example, I recently met a case where the demands seem to have run riot; it was four 4-storey single family houses in a very well constructed rebuilt terrace in which, in each house, there was access to both the back garden and the front street on the basement and ground floor, access to a continuous balcony at the front on the 1st floor and very easy access to the flat roofs of the terrace from the 2nd (top) floor but none-

theless all the doors opening on to the staircase on the lower three floors had to be of a fire-resisting type and hung to be self-closing with springs; the cupboards opening on to the wide staircase landings on all floors, except the ground floor, had also to have fire-resisting doors hung on rising butts to make them self-closing. These requirements would not seem to be unreasonable if the building was sub-divided or even sub-let in several tenancies but they seem to be rather excessive in houses designed for and used by single families. One has a slight feeling that those concerned with the fire requirements for buildings have access to all the evidence of the incidence of fires but do not assess this evidence in relation to the total number of buildings and err on the side of caution. In any event self-closing internal doors are a nuisance to the occupants of all types of dwellings.

**DUTCH UNCLE.**

## THE LAW OF BUILDING CONTRACTS

### **X. Frustration**

BY GILES BEST

**U**NDER the title "Sanctity of Contract" a previous article in this series dealt with the legal position of parties to a contract whose performance becomes more onerous than could have been anticipated at the time the contract was made. In that article it was stressed that the mere fact that a contract becomes unprofitable does not give the party likely to incur a loss the right to call for the contract to be terminated or for a fresh basis of payment unless there are express terms in the contract giving such a right. It is only in those cases where the original basis of agreement has been replaced by a fresh arrangement consented to by both parties that the courts will draw the inference that a new basis of payment was also agreed. In these cases the contract continues in being despite a major change of circumstances. The purpose of this article is to discuss the cases where a major change of circumstances brings the contract to an end and relieves both parties of their obligations. These are the cases where the purpose of the contract

becomes impossible to perform and is said to be frustrated.

For example a contract with a foreigner may be frustrated by the outbreak of war and the suspension of all trade with his country. Or a contract to build a house on land by the sea may be frustrated by the land being submerged so that there is nothing to build on. In both these cases something has happened which has made it impossible for the contract to be performed in the way that was anticipated at the time it was made. The effect of this is to destroy the whole basis of agreement between the parties and to bring the contract to an end. In both the cases that were suggested the events which occurred which made the contract impossible to perform were outside the control of either party and could not have been anticipated by either of them. As a contrast suppose a case where it is agreed that a builder is to build a house for a client, suppose also that the builder has agreed to build four other houses for another client, and that bad weather and

labour troubles make it impossible for him to finish them all. If the builder under these circumstances chooses to favour the client with four houses he cannot meet protests from the one house client with the claim that the contract has been frustrated and made impossible by circumstances outside his control. In any case like this where there is an element of choice there cannot be said to be circumstances outside the control of the parties.

One test which has been suggested as a guide is to suppose that at the time the contract was made there was present a third person as well as the two parties to the contract. If at the time the contract was made this third person had intervened and said "What will you do if so and so happens?" and both parties ought to have replied "Of course in such a case the whole thing is off", it is clear that the circumstances which eventually make performance of the contract impossible were outside the contemplation of the parties to contract. So an agreement by a singer to perform at a

theatre has been held to have been frustrated when the theatre was destroyed by fire. But an agreement to build a factory at a fixed lump sum would not be frustrated by a rise in the price of materials. The distinction in fact is between ordinary and extraordinary business risks, or between risks that no one could anticipate and risks which were taken into account at the time of the contract.

The effect of frustration when it occurs is to bring to an end all rights and obligations under the contract. Neither party can sue or be sued for non-performance and until the passage of the Law Reform (Frustrated Contracts) Act 1943 it was possible for a very inequitable situation to arise between the parties. If the contract was an entire contract and did not provide for payment until completion, frustration might occur at a point when one of the parties had done a great deal of work and incurred expenses which because of the frustration of the contract he would be unable to recover from the other party. On the other hand if the contract provided that payment was to be made before the work was begun, and payment was made, the money paid might be irrecoverable despite the frustration of the contract. The Act of 1943 created new rules in both these situations and removes almost all the difficulties which may arise.

The effect of the act is that if a contract requires payment in advance of performance, any money paid can be recovered if the performance becomes impossible in circumstances amounting to frustration. On the other hand the person to whom the money has been paid is entitled to deduct from it the cost of any work which he may have done up to the time of frustration. To take a simple illustration suppose a building owner agrees with a builder that the builder shall execute repairs and alterations to existing premises, payment to be made in advance. The builder prepares plans and hires special machinery but before he can start work the building is destroyed by fire. The building owner is then entitled to say that the contract is frustrated and demand the return of the money paid, but the builder is entitled to subtract from that money the cost of the preliminary work he has done.

Payment in advance is an unusual term to find in a building contract, and the most usual agreement of course is in the form of an entire contract by which the builder is not entitled to payment (with the exception in many cases of interim advances) until completion of the works. Before the passage of the act no compensation could be claimed by a builder for work done by him if the events which led to frustration of the contract occurred before the date for payment. Thus a builder might find that half way through the construc-

tion of works events such as the outbreak of war occurred which frustrated the contract. He would be unable to claim the value of the work he had done and unable to finish the work so as to qualify for final payment. The act of 1943 provides that in such a case if he sued the building owner the Court would have power to award him a sum which would represent the value to the building owner of the work done up to the time of the frustration. This provision undoubtedly is not entirely self explanatory and there is room for doubt as to the position in certain cases. If for example a contract for alterations to a house is frustrated by the destruction of the whole house and the alterations by fire it is arguable that the work which has been done and been destroyed is of no value to the building owner. The more likely interpretation, however, is that the builder is entitled to claim that since the work was done on the premises for the benefit of the owner its value to him at the time of destruction is the amount due to the builder.

By these provisions the act contrives a rough system of justice between the parties. Of course the act only applies to cases where contracts have been frustrated and not to cases where the contract has been terminated in any other way. Certain contracts are specifically excepted from the scope of the act but they are outside the general field of building contracts. Moreover it is possible to exclude the provisions of the act or of any common law rules as to frustration by the insertion of special provisions in the terms of a contract.

The R.I.B.A. standard form of Building Contract makes special provisions in Clause 253 by which the parties to the contract can adjust their position on the outbreak of war. Either party can determine the contract by seven days notice and the contractor thus becomes entitled to payment as though he had exercised an option to determine the contract in accordance with the provisions of section 20 of the contract. There is of course also a clause which deals with war damage. The C.C.C./Wks/1 government form of contract of course contains a "special powers of determination" clause (44) which covers any frustrating event. Obviously there is a very real advantage if such clauses are included in a contract. The builder in the case of the R.I.B.A. contract benefits by the difference between the arrangements for payment for all the work he has done which are set out in Section 20(2)(a) and (2)(b) of the contract, and the uncertainty which may arise when the court has to decide whether the work he has done is "a valuable benefit" to the building owner. Particular care, therefore, ought to be exercised to ensure that clauses to cover war risks or frustrations are included in the contract.

## TIMBER SUPPLY NOTES

THE market in all sections of the timber trade has now reached a state of plenty. In the main softwood trade over 1,800,000 standards were placed under contract for delivery this year, which is well in excess of the anticipated consumption. Stocks are high as the peak of the shipping season passes, and some firms have been selling cheaply to bring down stocks and satisfy the banks.

Re-selling prices are not comparable with replacement costs in any section of the trade — softwood, hardwood, plywood or building board. Price cutting is evident, especially in boards, plywood and softwood.

Offers have been made of 4,000 standards of damaged softwood from the Government strategic stock, of 3,000 standards of Czechoslovakian whitewood based on a price of £84 a standard c. and f. for 7 in. material, and of 4,000 standards of Polish redwood. A few sales of Russian redwood have been made. Prices have been steady, and the timber trade is determined to do its best to hold the present market level while stocks are so high.

Hemlock and Douglas fir prices are unchanged from Canada, but higher freight rates are a danger. The forthcoming campaign for B.C. timbers will lay the emphasis upon hemlock for building, this timber being widely used over in Canada and the supplies of hemlock now far outstripping Douglas fir. However, it has to be borne in mind that hemlock from Western Canada is not as good as Douglas fir by quite a margin. Hemlock has a high moisture content and does not usually season so easily as Douglas fir, nor is it so resistant to decay. The carpenter finds Douglas fir a much better wood to use, especially in nailing properties. While the desire of the Canadians to expand sales of hemlock in this country is understandable, it would be well if the building trade were to take it on its own merits, without comparison with Douglas fir, for any who expect it to match Douglas fir are certain to be disappointed.

Freight rate increases are likely to send up hardwood prices again shortly. Plywood is being sold at prices below replacement cost at the moment, but so far there is no indication of a fall in plywood prices overseas. Supplies of gibbon plywood, for instance, are being quoted at unchanged prices for 1956.

Manufacturers of building boards and chipboards are not reducing prices. Sales at cut prices in hardboard are frequent, but these should not be taken for sign of a real weakening of the market for next year. It must be remembered that many of the sales in the timber trade being made today at apparently lower prices are really forced sales. The credit restriction is hitting the importers, and with dangerously high stocks they are struggling to sell as much as possible.



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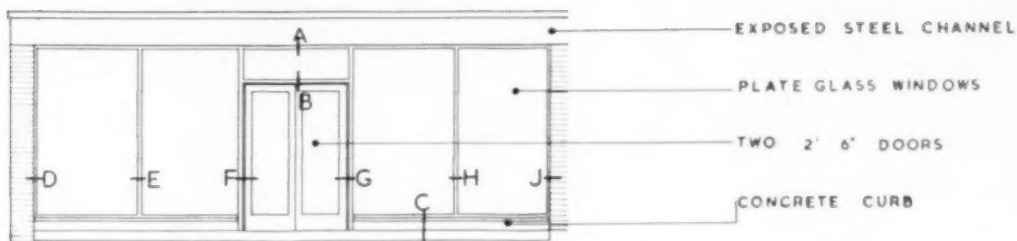
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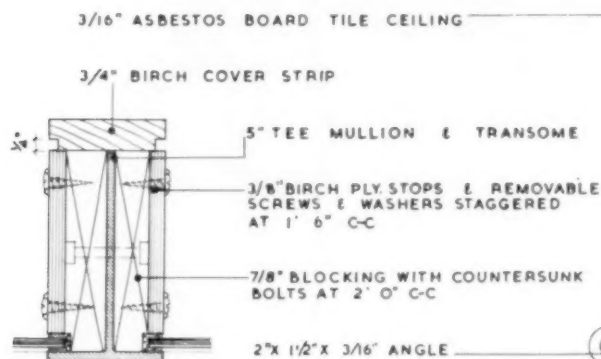
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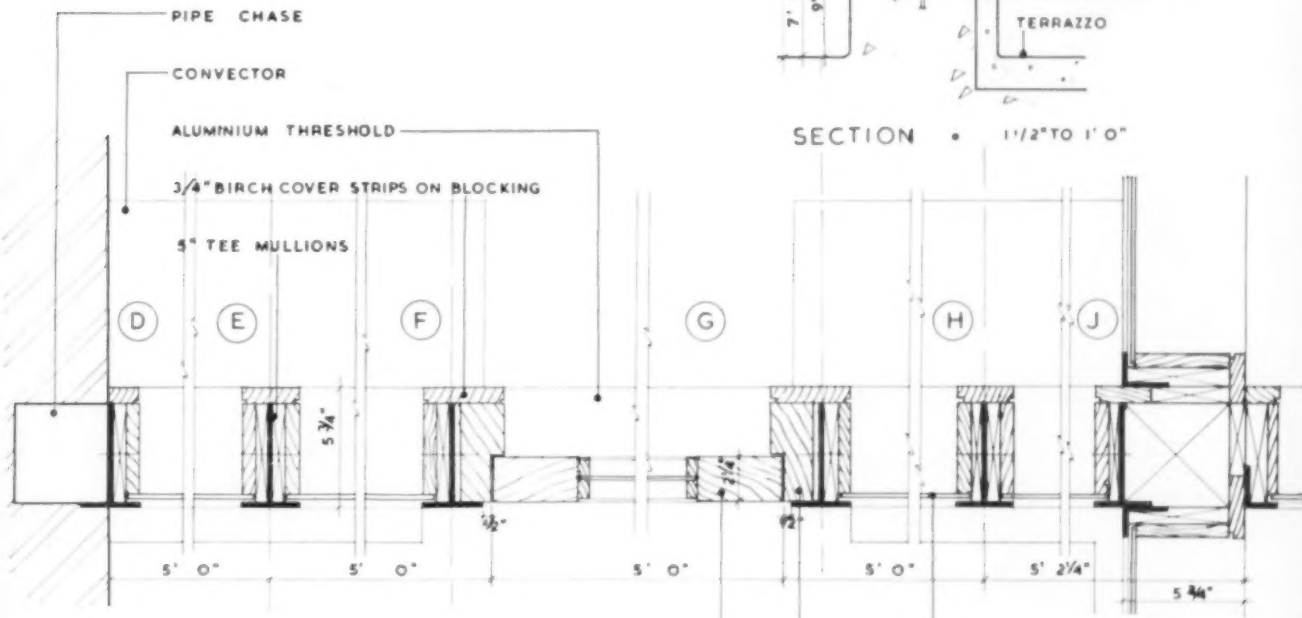
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**BECKENHAM B.C.** (a) Erection of a single storey branch library and public conveniences adjoining at Glebe Way, West Wickham. (b) Borough Engineer, Town Hall. (c) £2. (e) December 2.

**CAERPHILLY U.C.** (a) Erection of an office over the public conveniences in Cardiff Road. (b) Council's Engineer, Council Offices. (c) 1 gn. (e) November 19.

**CAMBRIDGE C.C.** (a) Erection of new dwellings, mainly on the Arbury Road estate. (b) City Surveyor, The Guildhall, giving details of the number of dwellings prepared to erect and stating when able to commence work.

**CARLTON U.C.** (a) Erection of 22 houses at Foxhill Road site, scheme No. 83 — site No. 25. (b) Council's Engineer, Council House, Burton Road. (c) 2 gns. (e) November 23.

**CHESTER R.C.** (a) Erection of 34 houses and flats at Upton by Chester. (b) Council's Architect, 16, White Friars. (c) 3 gns. (d) November 21.

**CROYDON CORPORATION.** (a) Carrying out improvements to the sanitary accommodation at All Saints' School, Beulah Hill. (b) Chief Education Officer, Katharine Street. (c) £1. (e) November 23.

**CUMBERLAND E.C.** (a) Carrying out alterations and extension at Shankhill Voluntary Controlled School, Nr. Hethersgill. (b) County Architect, 15, Portland Square, Carlisle. (e) December 12.

**DURHAM C.C.** (a) Erection of one pair of police houses at High Street, South Hylton, one pair at Barnwell Estate, Penshaw, one pair with office and one detached house at Hetton Downs. (b) County Architect, South Street. (d) November 14.

**EAST SUSSEX C.C.** (a) Erection of Seaford Chyngton C.P. School. (b) County Architect, County Hall, Lewes. (d) November 17.

**EIRE—OFFALY C.C.** (a) Carrying alterations and additions to existing buildings and erection of new clinic at the District Hospital, Birr. (b) County Secretary, Courthouse, Tullamore. (c) 10 gns. (e) November 21.

**EIRE—TIPPERARY C.C.** (a) Erection of a staff home at St. Mary's Hospital, Thurles. (b) The Secretary, Council Offices Thurles. (c) 10 gns. (e) November 22.

address it is the same as the locality given in the heading, (c) deposit, (d) last date of application. (e) last date and time for submission of tenders. Full details of contracts marked \* are given in the advertisement section.

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**GRAVESEND B.C.** (a) Erection of 68 houses in 29 pairs, one block of four and one block of six, of traditional brick construction at Valley Drive, Scheme 11 A. (b) Borough Engineer, 6, Woodville Terrace. (c) 2gns. (e) November 26.

**HAMPSHIRE C.C.** (a) Carrying out alterations and adaptations at 14 and 15, High Street, Christchurch, to form offices. (b) County Architect, The Castle, Winchester. (c) 1gn. + (d) November 15. + by cheque, payable to Council.

**HARROW B.C.** (a) Lists are being prepared of contractors from whom tenders will be invited during the period ending September 30th, 1956, for the erection of houses, flats and ancillary works. List (1) over £100,000, list (2) between £30,000 and £100,000, and list (3) between £1,000 and £30,000. (b) Applications for inclusion in any or all the selected lists, which should be clearly stated to Town Clerk, The Council Offices, Harrow Weald Lodge, with full particulars of works of the particular category recently carried out, preferably for local authorities, together with the name and address of the Architect or Authority, also details of labour resources. (d) November 30.

**HORSHAM U.C.** (a) Erection of 12 houses on the Needles Farm estate. (b) Council's Engineer, Council Offices, Horsham Park. (c) 2gns. (e) December 5.

**LINDSEY E.C.** (a) Erection of an instalment of a new secondary modern school at Gainsborough. Approx. cost £150,000. (b) Messrs. Myles-White, Vallance and Westwick, Paradise House, Paradise Street, Sheffield, 1.

**LANCASHIRE C.C.** (a) Carrying out extensions, adaptations and repairs to provide office and canteen accommodation at County Fire Brigade Headquarters, Broughton, Nr. Preston, alterations at Accrington Fire Station, alterations at Leigh Fire Station, minor alterations and improvements at Swinton "West Dene" Day Nursery. (b) County Architect, P.O. Box No. 26, County Hall, Preston, quoting ref. A/MG. (c) £2 each job. (d) November 15.

**LIVERPOOL C.C.** (a) Erection of (1) extensions to junior department at Speke Millwood C.P. School, Liverpool, 19, (2) two additional classrooms at Heath Road S.M. School, Liverpool, 19, (3) three additional classrooms at Kings-thorne Road C.P. School, Liverpool, 19, and (4) extensions, etc., at Morrison S.M. School, Mossley Avenue, Liverpool 18. (b) City Architect, Blackburn Chambers, Dale Street, Kingsway, Liverpool, 2. (c) 2gns. each contract. (e) November 19.

**LONDON—ACTON B.C.** (a) Erection in brickwork or precast concrete of five lock-up garages in Beaconsfield Road. (b) Borough Engineer, Town Hall, W.3. (e) November 25.

**LONDON—HENDON B.C.** (a) Erection of 5 shops with 5 maisonnettes over, a block of 5 garages with access road to same, and all drainage and external works at Broadfields Avenue, site No. 19, Edgware. (b) Borough Engineer, Town Hall, N.W.4. (c) 2gns. (d) November 14. (e) December 5.

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**LONDON—LEYTON B.C.** (a) Erection of a strongroom at the Town Hall and reconstruction of a dwarf wall round the central library comprising brickwork, concrete and ancillary works. (b) Borough Engineer, Town Hall, E.10.

**LONDON—LEYTON E.C.** (a) Conversion of classroom block into dining-room and scullery at Davies Lane Primary School. (b) Borough Engineer, Town Hall, E.10., together with full details of previous works carried out. (d) November 15.

**LOUTH R.C.** (a) Erection of 4 bungalows and 4 houses at Ludford Parva. (b) Wm. Saunders and Partners, 24, Castle Gate, Newark-on-Trent, or 14, Mercer Row. (c) 3gns. (e) November 30.

**MANSFIELD B.C.** (a) Contract No. 26/F. Erection of six blocks of four flats at Ladybrook estate, site 5E. (b) Borough Engineer, Carr Bank. (c) 2gns. (e) November 30.

**NEWMARKET U.C.** (a) Erection of 8 houses in Adastral Close, on the Houldsworth Valley Estate. (b) Council's Architect, Council Offices, Severals House. (c) 2gns. (e) November 30.

**NEW SARUM C.C.** (a) Erection of 34 houses and flats on the Bishopdown Estate, Salisbury. (b) City Engineer, The Council House, Bourne Hill, Salisbury. (c) 2gns. (e) November 21.

**N. IRELAND—BELFAST C.C.** (a) Erection and completion of a block of nine flats at Mountcollyer Avenue and a block of six flats at Castleton Avenue. (b) Housing Architect's Dept., Chichester Street. (c) £5. (e) November 22.

**N. IRELAND — CO. DERRY.** (a) Erection and completion of a new v.p. school and school meals kitchen incorporated in main building at Straw, Draperstown, for the Very Rev. M. Collins, Draperstown, and Londonderry Education Committee, Whitehall Chambers, New Row, Coleraine. (b) P. Davidson, 16 High Street, Belfast. (c) 5gns. (e) November 23.

**N. IRELAND—DOWN EDUCATION COMMITTEE.** (a) Erection of a new intermediate school and meals kitchen at Saintfield. (b) Messrs. W. H. Stephens and Sons Ltd., 13, Donegall Square North, Belfast. (c) 5gns. (e) December 1.

**N. IRELAND — GOVERNMENT OF NORTHERN IRELAND.** (a) Erection of a Civil Defence rescue service depot at Dee Street, Belfast. (b) Ministry of Finance, Room 103, Law Courts Building, May Street, Belfast. (c) £2. (e) November 21.

**ST. AUSTELL U.C.** (a) Erection of 20 dwellings at Eastbourne site, St. Austell, 20 dwellings at School Hill site, Mevagissey. (b) Council's Engineer, Municipal Offices. (c) 2gns. (e) December 3.

**ST. IVES B.C.** (a) Erection of 8 bungalows in Crown Walk. (b) E. Price Laverder, 17a, The Broadway. (c) 2gns. (e) November 21.

**SCOTLAND—COLDSTREAM BURGH COUNCIL.** (a) Erection of 4 houses at High Street. (b) Town Clerk, Bank of Scotland Chambers, High Street. (d) November 19. (e) December 17.

**SCOTLAND—GLASGOW CORPORATION.** (a) Erection of proposed lighting depot at Helen Street, Govan. (b) Architectural and Planning Department, 20, Trongate, Glasgow, C.I. (c) November 25.

**SCOTLAND—NORTH OF SCOTLAND HYDRO ELECTRIC BOARD.** (a) Erection of steelwork in building extensions to the turbine room and boiler houses, etc., at Carolina Port Generating Station, Dundee. (b) P. Philip, 7, Dudhope Crescent Road, Dundee. (c) 2gns. (e) December 3.

**SHEFFIELD C.C.** (a) Erection of 114 houses on the Gleadless Valley Estate. (b) Town Clerk, Town Hall. (c) £2. (e) November 14.

**STAFFORDSHIRE C.C.** (a) Erection and completion of a new stores block at proposed police headquarters, Baswich House, Stafford. (b) Council's Clerk, County Buildings, Stafford. (c) 3gns. (e) December 5.

**TYNEMOUTH B.C.** (a) Erection of 54 dwellings in 4-5 storey blocks in the east end of North Shields. (b) Messrs. A. K. Tasker and Austin Child, 25, New Bridge Street, Newcastle-upon-Tyne. (c) 4gns. (e) December 5.

**WALSALL CORPORATION.** (a) Erection of the new infant department Hather-ton Lane Primary School. (b) Borough Engineer, Council House. (c) 2gns. (e) December 2.

**WARRINGTON B.C.** (a) Alterations and additions to Padgate Hall to form a school. (b) Borough Surveyor, Town Hall. (e) November 18.

**WEST SUFFOLK C.C.** (a) Erection of (1) a range of farm buildings at Palmer's Farm, Cockfield; (2) a range of farm buildings at Rickingham, and (3) a cattle lodge and stock yard at Wamil Road, Mildenhall. (b) County Land Agent, Shire Hall, Bury St. Edmunds. (c) November 18.

**WILTS C.C.** (a) Erection of a girls' hostel at Trowbridge. (b) Council's Clerk, County Hall, Trowbridge. (c) 2gns. (d) Immediately. (e) November 23.

**WILTS C.C.** (a) Erection of additions and alterations at Southbroom Secondary Modern School, Devizes. (b) Council's Clerk, County Hall, Trowbridge, with details of available labour force, plant, organisation and particulars of any similar work done. (d) November 17.

**WORCESTER C.C.** (a) Erection of 50 houses in pairs and terraces at Warndon. (b) City Engineer, 22, Bridge Street. (c) 3gns. (e) November 25.

## PLACED

*Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.*

**CROYDON B.C.** (1) Stage 2 of Technical College. (3) R. H. Lynn and Co., Ltd., 209, Whitehorse Road, Thornton Heath, Surrey. (4) £320,534.

**CRAWLEY DEVELOPMENT CORPORATION.** (1) Five blocks of shops. (2) Town Centre. (3) Peak Construction Co., Ltd., Knight Road, Sirood, Rochester, Kent. (4) £498,000.

**LONDON W.** (1) Rebuilding for John Lewis and Co., Ltd. (2) Oxford Street, W.1. (3) Rush and Tompkins, Ltd., Station Road, Sidcup, Kent.

**BLACKWELL (DERBYS.) R.D.C.** (1) 68 houses, 16 bungalows. (2) Shirebrook. (3) J. Searson, Ltd., Sutton-in-Ashfield, Notts. (4) £129,000.

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**CAMBERWELL B.C.** (1) 52 dwellings. (2) Camberwell Grove. (3) Henry Boot and Sons, Ltd., 10 The Boltons, London, S.W.10. (4) £143,679. (1) 48 dwellings. (2) Six small sites. (3) J. A. Proctor Ltd., 163, Burrage Road, London, S.E.18. (4) £101,505.

**SOUTHWARK B.C.** (1) 39 houses, 87 flats. (2) Doctor Street. (3) Wilson, Lovatt and Sons, Ltd., 16, Grosvenor Crescent, London, S.W.1.

**NOTTINGHAM.** (1) New hotel. (2) Clifton. (3) Geo. Wimpey and Co., Ltd., 25, Hammersmith Grove, London, W.6.

**WELWYN GARDEN CITY.** (1) Extension to factory for Ardath Tobacco Co., Ltd. (2) Broadwater Road. (3) Humphreys Ltd., 187, Knightsbridge, London, S.W.7. (4) £500,000.

**WANDSWORTH B.C.** (1) 185 flats. (2) Putney. (3) J. Jarvis and Sons Ltd., 239, Vauxhall Bridge Road, S.W.1. (4) £463,500.

**BEDFORDSHIRE C.C.** (1) Second phase of North Beds. Technical College. (3) J. M. Hill and Sons (Amphill) Ltd., Amphill, Bedfordshire. (4) £66,726.

**HULL CORPORATION.** (1) Occupation Centre. (2) Twendykes Road. (3) Stepney Contractors Ltd., Beverley, Yorks. (4) £49,485.

**PLYMOUTH CITY COUNCIL.** (1) 42 flats, 34 shops. (2) Adjoining Pannier Market. (3) John Laing and Son, Ltd., London, N.W.7. (4) £157,750.

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**PENZANCE B.C.** (1) 56 flats. (2) St. Clare Street. (3) Venn Bros., 1, Bread Street, Penzance, Cornwall. (4) £78,131.

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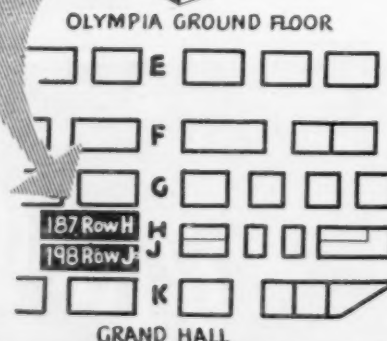
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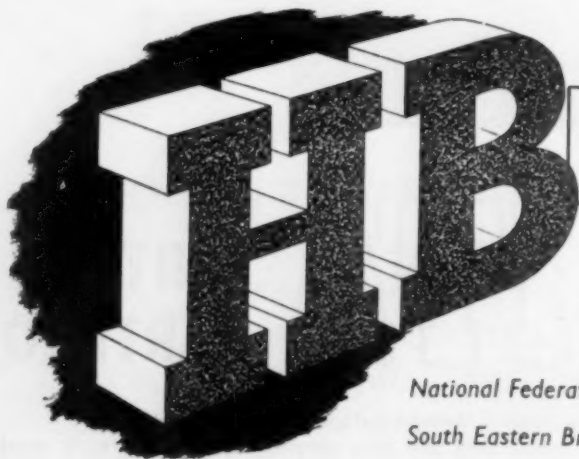
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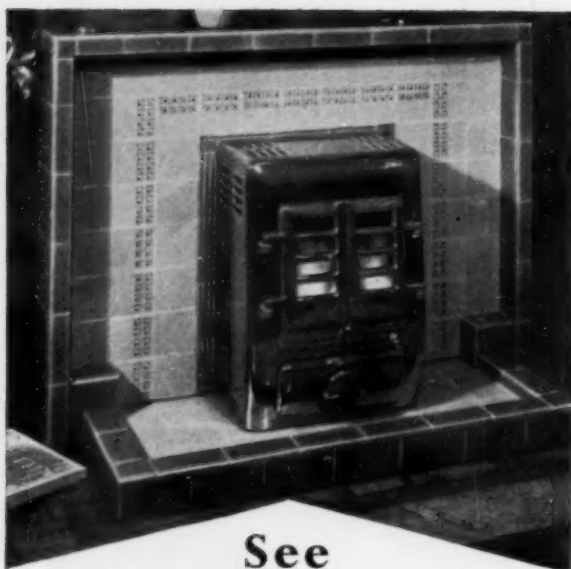
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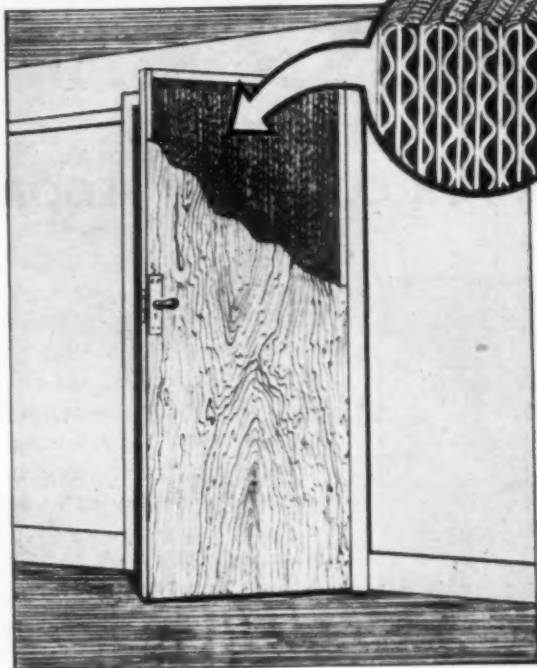
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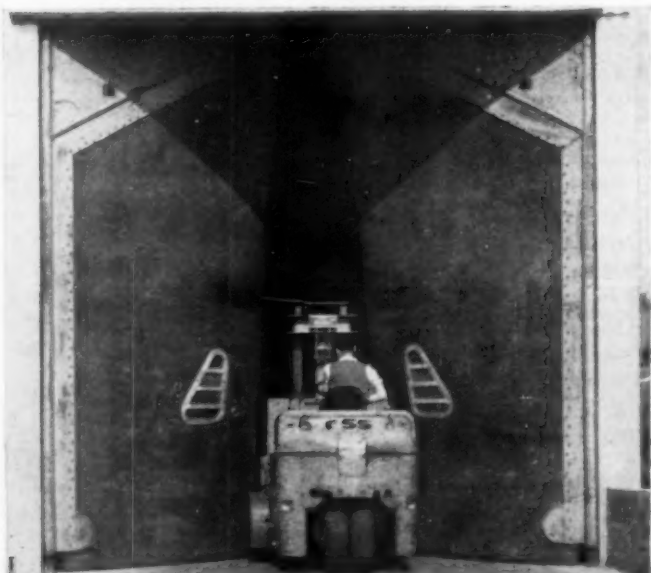
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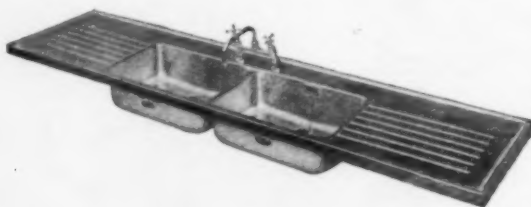
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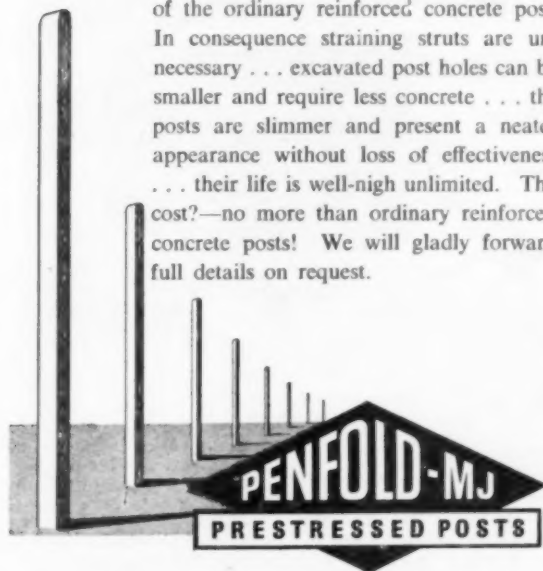
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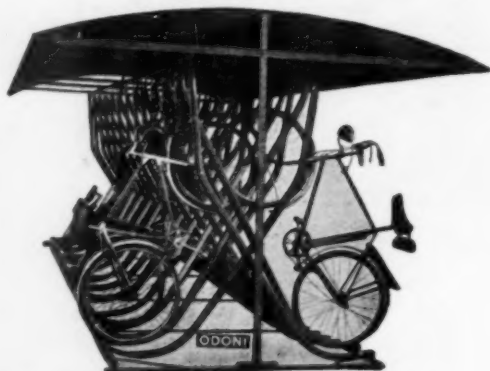


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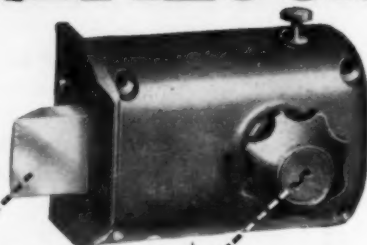
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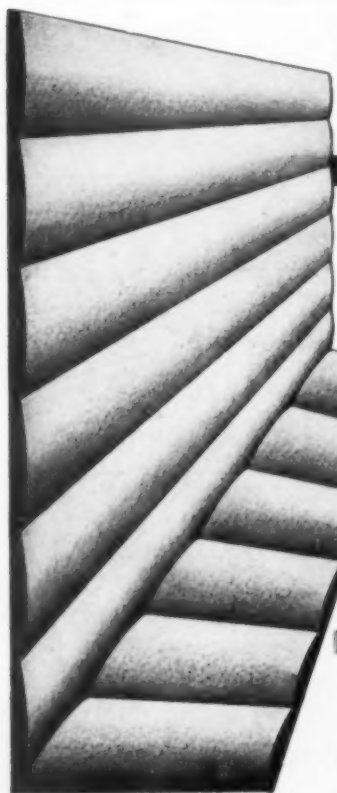
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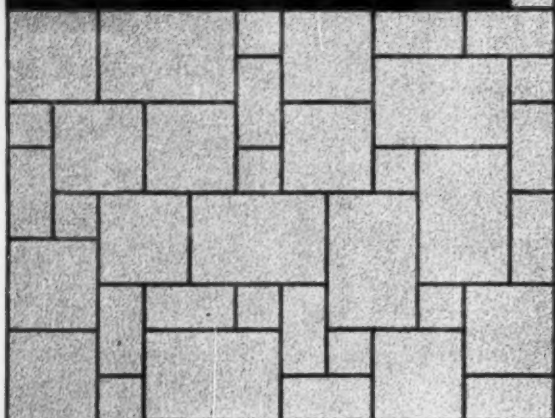
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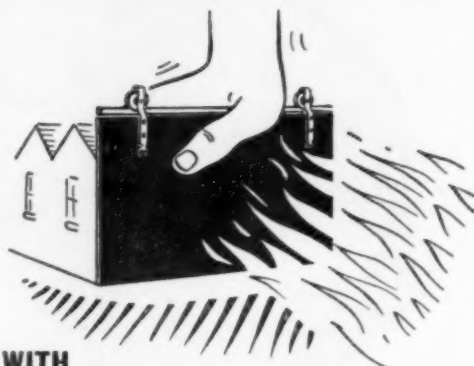
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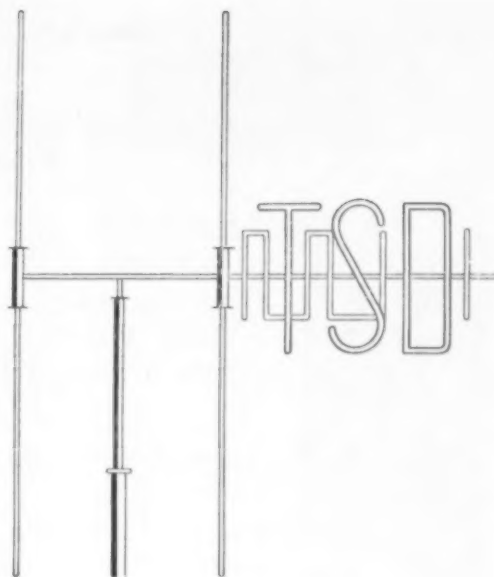
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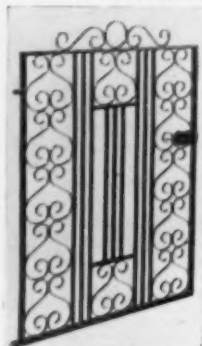
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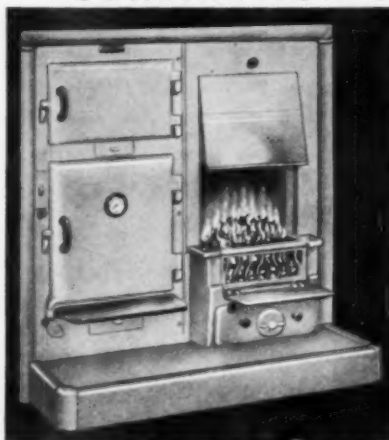
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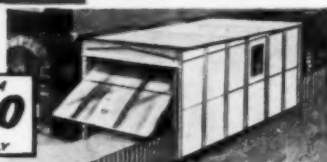
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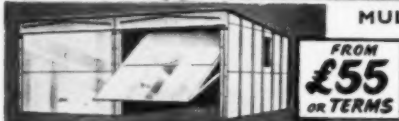
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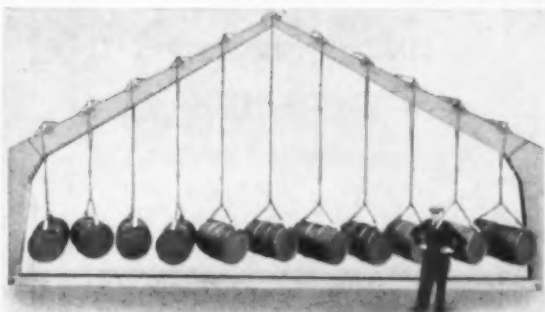
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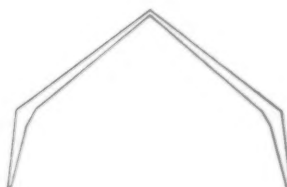
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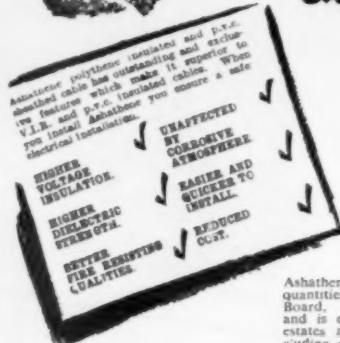
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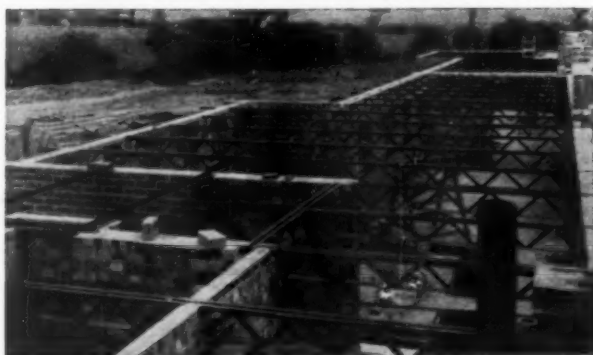
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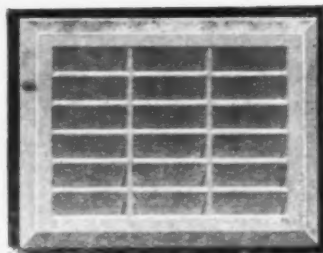
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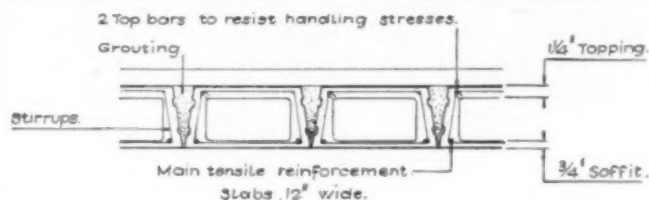
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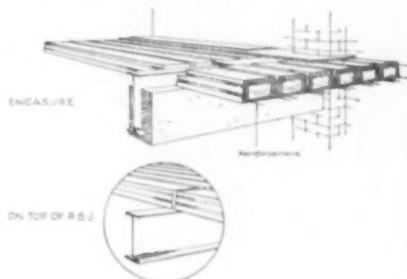
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Applications giving all relevant particulars, including age, experience, war service, if any, and the names of two referees, should be forwarded to the Secretary, Park Parade, Harrogate, not later than November 25, 1955. [1721]

#### COUNTY BOROUGH OF ROCHDALE

APPLICATIONS are invited for the appointment of Senior Quantity Surveyor in the Borough Surveyor's Department at a salary of £675 rising by annual increment of £30 to £825 per annum. The appointment will commence at a salary above the minimum, according to qualifications and experience.

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Applications, stating age, qualifications and full particulars of experience together with the names and addresses of two persons to whom reference may be made and endorsed "SENIOR QUANTITY SURVEYOR," must be delivered to the Borough Surveyor, Town Hall, Rochdale, by 9 a.m. on Friday, December 2, 1955.

K. B. MOORE,

Town Clerk. [1714]

#### LONDON COUNTY COUNCIL

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Further particulars and application forms obtainable from and to be returned to The Borough Architect, The Council House, Corporation Street, Derby, not later than Monday, November 28th, 1955.

G. H. EMLYN JONES,

Town Clerk, [1727]

November 2nd, 1955.

#### LONDON COUNTY COUNCIL.

##### ARCHITECTS' DEPARTMENT

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National Scheme of Conditions of Service applies and registered disabled persons will be considered.

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### APPOINTMENTS—contd.

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### ARCHITECTURAL APPOINTMENTS VACANT

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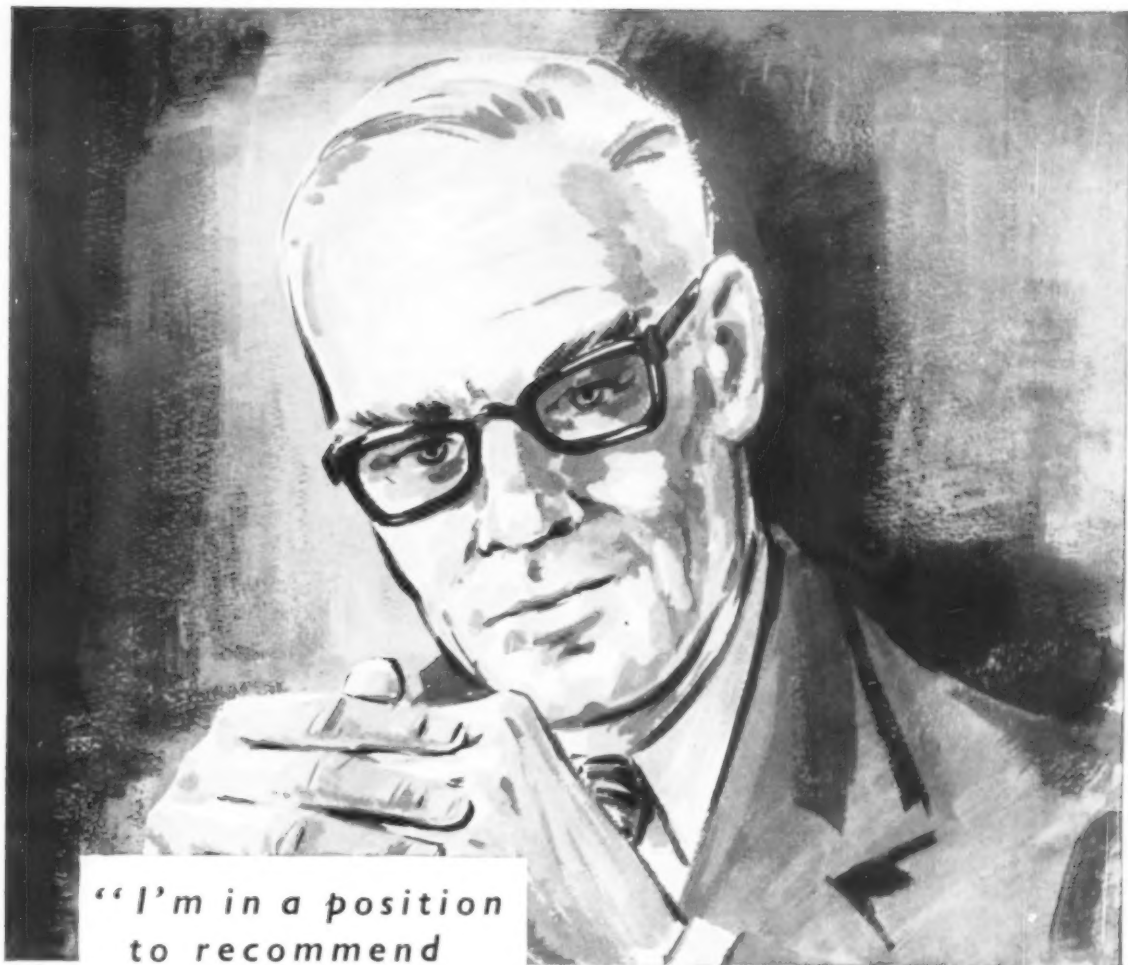
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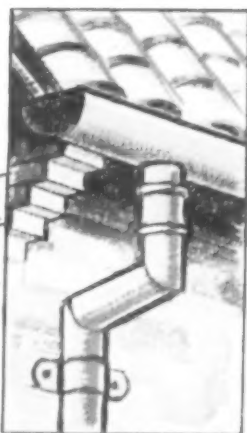
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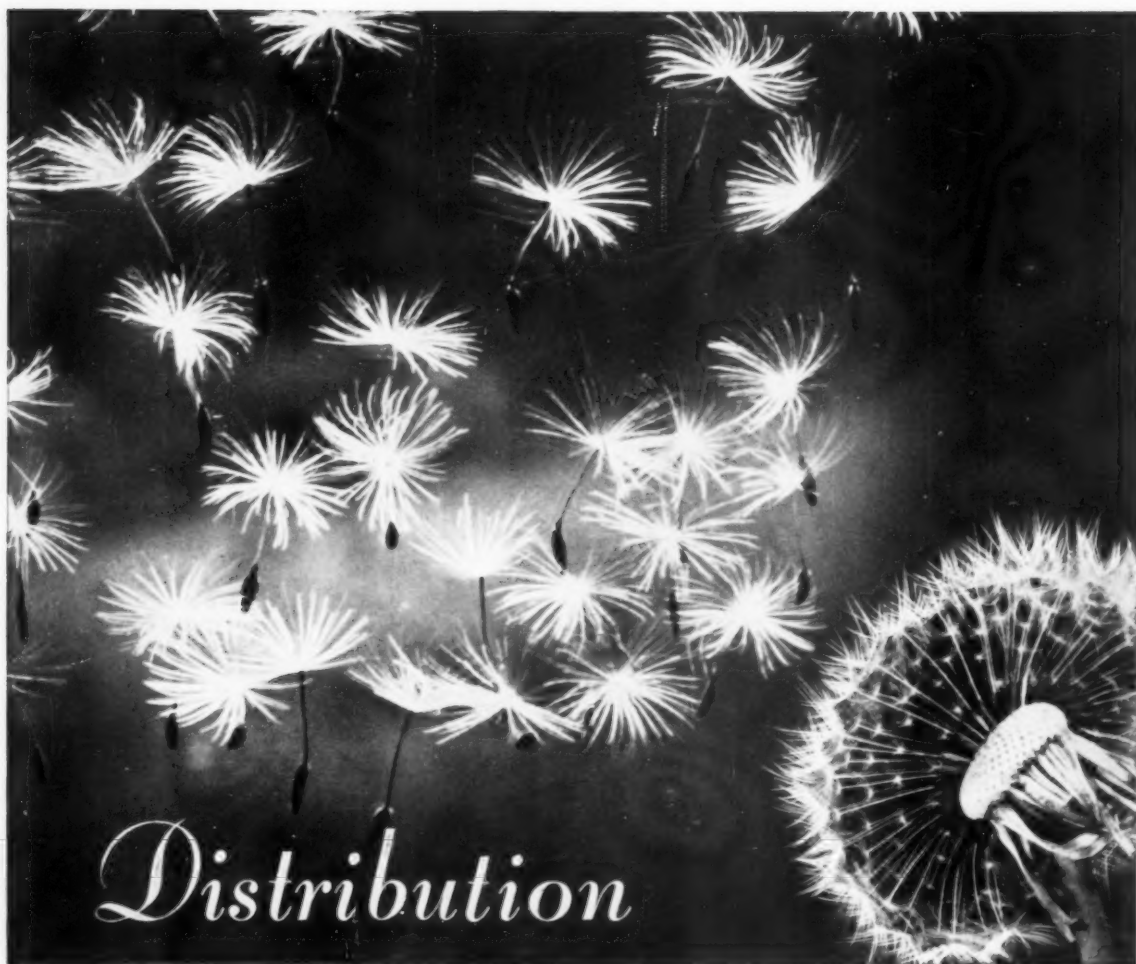
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